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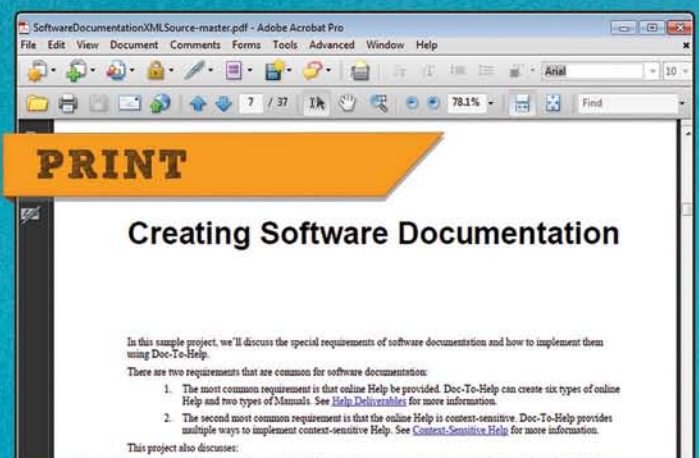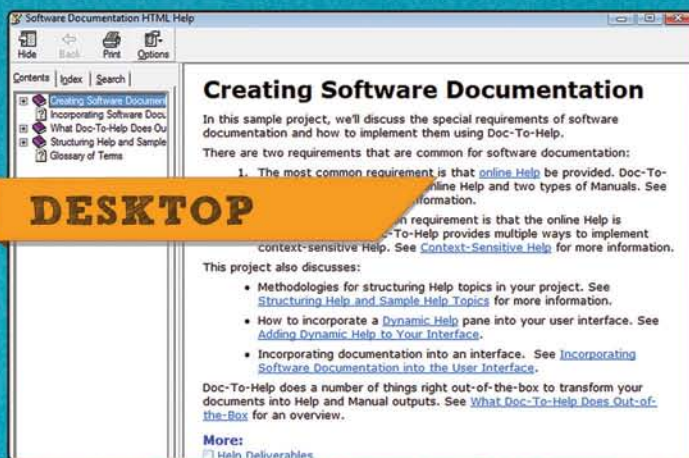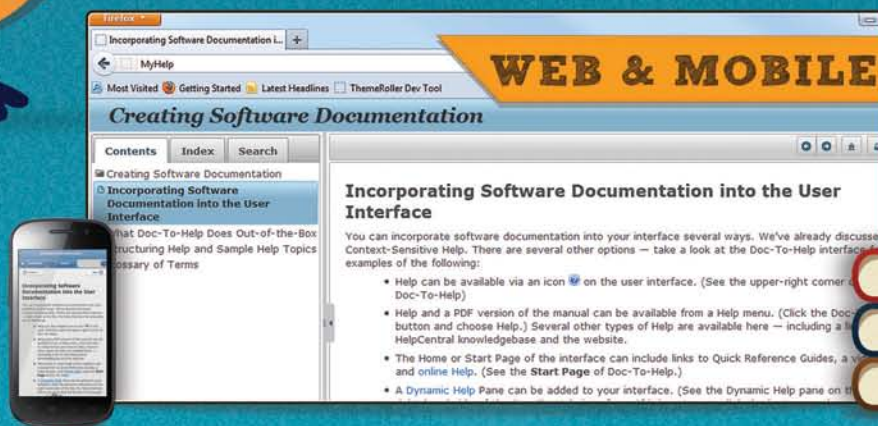# COMMUNICATION

STC

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Creating Software Documentation

Contents | Index | Search

Creating Software Documentation
- Incorporating Software Documentation into the User Interface
- What Doc-To-Help Does Out-of-the-Box
- Structuring Help and Sample Help Topics
- Glossary of Terms

Incorporating Software Documentation into the User Interface

You can incorporate software documentation into your interface several ways. We've already discussed Context-Sensitive Help. There are several other options — take a look at the Doc-To-Help interface for examples of the following:

- Help can be available via an icon on the user interface. (See the upper-right corner of Doc-To-Help)
- Help and a PDF version of the manual can be available from a Help menu. (Click the Doc-To-Help button and choose Help.) Several other types of Help are available here — including the HelpCentral knowledgebase and the website.
- The Home or Start Page of the interface can include links to Quick Reference Guides, a video, and online Help. (See the **Start Page** of Doc-To-Help.)
- A Dynamic Help Pane can be added to your interface. (See the Dynamic Help pane on the...

DESKTOP

Creating Software Documentation

In this sample project, we'll discuss the special requirements of software documentation and how to implement them using Doc-To-Help.

There are two requirements that are common for software documentation:

1. The most common requirement is that online Help be provided. Doc-To-Help online Help and two types of Manuals. See information.

2. ...n requirement is that the online Help is To-Help provides multiple ways to implement context-sensitive Help. See Context-Sensitive Help for more information.

This project also discusses:

- Methodologies for structuring Help topics in your project. See Structuring Help and Sample Help Topics for more information.
- How to incorporate a Dynamic Help pane into your user interface. See Adding Dynamic Help to Your Interface.
- Incorporating documentation into an interface. See Incorporating Software Documentation into the User Interface.

Doc-To-Help does a number of things right out-of-the-box to transform your documents into Help and Manual outputs. See What Doc-To-Help Does Out-of-the-Box for an overview.

More:
Help Deliverables

PRINT

Creating Software Documentation

In this sample project, we'll discuss the special requirements of software documentation and how to implement them using Doc-To-Help.

There are two requirements that are common for software documentation:

1. The most common requirement is that online Help be provided. Doc-To-Help can create six types of online Help and two types of Manuals. See Help Deliverables for more information.

2. The second most common requirement is that the online Help is context-sensitive. Doc-To-Help provides multiple ways to implement context-sensitive Help. See Context-Sensitive Help for more information.

This project also discusses:

What is a technical communicator? Technical communicators develop and design instructional and informational tools needed to ensure safe, appropriate, and effective use of science and technology, intellectual property, and manufactured products and services. Technical communicators combine multimedia knowledge and strong communication skills with technical expertise to provide education across the entire spectrum of users' abilities, technical experience, and visual and auditory capabilities. For more information visit www.stc.org/story/tc_tw.asp.

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COMMUNICATION

Journal of the Society for Technical Communication

AUGUST 2012

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Technical Communication is a peer-reviewed, quarterly journal published by the Society for Technical Communication (STC). It is aimed at an audience of technical communication practitioners and academics. The journal's goal is to contribute to the body of knowledge of the field of technical communication from a multidisciplinary perspective, with special emphasis on the combination of academic rigor and practical relevance.

Technical Communication publishes articles in five categories:

- **Applied research** – reports of practically relevant (empirical or analytical) research
- **Applied theory** – original contributions to technical communication theory
- **Case history** – reports on solutions to technical communication problems
- **Tutorial** – instructions on processes or procedures that respond to new developments, insights, laws, standards, requirements, or technologies
- **Bibliography** – reviews of relevant research or bibliographic essays

The purpose of *Technical Communication* is to inform, not impress. Write in a clear, informal style, avoiding jargon and acronyms. Use the first person and active voice. Avoid language that might be considered sexist, and write with the journal's international audience in mind.

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- Page 3: Up to five keywords and a practitioner's take-away (maximum 100 words) – A bulleted list summarizing the practical implications of the article
- Page 4: Start of the manuscript
- References
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Menno D.T. de Jong, Editor

The World of Intriguing and Beautiful Instructions

At the annual STC Summit, I always make sure to see the award-winning publications in the Best of Show Competition. Invariably I am impressed by the craftsmanship and creativity of the technical communication professionals who designed them. This is where it all comes together: professionalism, education, research, and individual talents.

The winning practitioners receive recognition from their peers, but are seldom recognized by the persons they work for: the end users. Instructions are, in Herzberg's (1964) terms, a hygiene factor: high-quality instructions may help to avoid dissatisfaction among users, but are less likely to cause satisfaction. This in contrast to the so-called motivation factors, which may or may not cause satisfaction. Another complication is that the quality of technical communication products only shows when they are intensively used. Superficial inspection does not suffice to discriminate between good and not-so-good instructions.

Compared to their colleagues in advertising, technical communication professionals do their work in the shade. Collections of striking, humorous and beautiful commercials are made all over the world. Many of the commercials are available on YouTube, and people watch them for pleasure and talk about them with their friends. There are no popular Web sites, books or television programs celebrating memorable instructions.

However, people who have an eye for them can easily find thought-provoking examples.

Intriguing Instructions

Sometimes instructions are so surprising or different that they have a lasting effect on your thinking or behavior. Many years ago, I boarded an airplane and read the safety instructions. It was the first time (and also the last, I believe) that I read safety instructions stating that people should remove their glasses in the case of an emergency. I remember telling this to Patricia Wright, the most respected researcher in our field, who explained that the instruction made sense: It was meant to prevent injuries caused by glass splinters. But if that is true, how come that so few safety instructions give this advice? I cannot help thinking about this instruction every time I board an airplane and wait for take-off.

I had a similar experience when I visited the Great Wall in China. After a long climb, I found a warning sign on one of the towers regarding cell phone use in the case of a thunderstorm. The sign read: "Speaking cellphone is strictly prohibited when thunderstorm." On the Internet, I found variations on this theme, also from the Great Wall: "Mobile phone users warned of lightning strike risk" and "Don't call in thunder storm day." Of course, the difference in strategies used is interesting, but the most pressing question is why

this advice is given on the Great Wall and nowhere else? Discussions on the Internet reveal that a deadly accident in the past involving a cell phone user is the background of the warning sign. But what about the advice: Does it make sense or not?

Beautiful Instructions

Sometimes instructions do not raise such questions, but make you read and appreciate them simply because they are different and beautiful. In a garden in Suzhou (China), the signs to instruct visitors seemed to have almost the same appeal as the beautiful scenery. Instead of a prosaic "Keep off the grass," a sign read: "Don't tread on the grass as they have also life." And instead of an unheard-of sign "Behave yourself," another sign read "Civilized behaviour of tourists is another bright scenery." Is it culture? Translation? Strategy? Art?

In This Issue

The first article in this issue, by Ardion Beldad and Michaël Steehouder, focuses on the quality of helpdesk calls between nonnative English speakers. Helpdesk calls can be a nuisance to the users of technical devices from time to time, and in this study, the researchers added an extra complication, in the form of language differences. They used conversation analysis

to shed light on the causes of understanding problems, and argue that such problems can seldom be attributed to differences in language background between the callers. Specific communicative skills of helpdesk agents appear to be very important. Beldad and Steehouder discuss several techniques that helpdesk agents use to repair and prevent misunderstandings. The effectiveness of helpdesks is an understudied phenomenon within the domain of technical communication. Hopefully other researchers will take up this challenge and further investigate the success factors of helpdesks.

The second article is written by Jason Swarts. He studied another modality of technical communication: instructional video. His method of research was content analysis: he collected a sample of instructional videos of varying quality, and developed a coding scheme to analyze them. His research led to many specific process and product guidelines for those who want to use video to instruct people. His article can be read as a first step toward a set of high-level heuristics for instructional video.

Like the helpdesk calls, instructional video is also a topic that definitely deserves more research attention in the field of technical communication.

The third article, by Lisa Meloncon, can be placed in two research traditions. Meloncon investigated the content of academic certificates in technical and professional communication in the United States. On the one hand, the research is related to earlier articles analyzing the content of undergraduate and graduate programs in technical communication in the past volumes of *Technical Communication*. On the other hand, the research connects to the discussions about professionalization in our discipline, most notably in the recent double special issue. Meloncon provides a lot of factual information about academic certificates, and also raises many questions about such programs.

The fourth and last article is a tutorial written by Karina Stokes. She focuses on a topic that is increasingly important in professional life: grant writing. Both in business and governmental

organizations and in the academic world, grant writing has become an important success factor. Technical communicators may use their writing expertise to contribute to grant writing processes. Stokes' article provides many valuable and original insights to do so.

Together, the four articles show how research and practical recommendations are intertwined. In the first two articles, the empirical findings were translated into useful practical recommendations. In the third article, the empirical results raised many questions. Some of these questions call for future research; other questions are important to consider when making choices about certificate programs. In the last article, practical advice is offered on writing successful grants. The advice is based on the author's years of experience in grant writing, but at the end of the article, the author calls for future research to further validate the strategy proposed.

Reference

Herzberg, F. (1966). *Work and the nature of man*. Cleveland, OH: World Publishing.

Not That Button but the Other: Misunderstanding and Non-understanding in Helpdesk Encounters Involving Nonnative English Speakers

Ardion Beldad & Michaël Steehouder

Abstract

Purpose: The internationalization of "technical help over the phone" is tied to the increasing usage of a *lingua franca* facilitating the interaction between a call center agent and a caller who are both linguistically different. Researchers have noted that interactions between two parties who are nonnative users of the language employed for the encounter are peppered with understanding problems. This study looks into the causes of understanding problems in helpdesk encounters between nonnative speakers of English and the techniques those interacting parties used to resolve or prevent flaws in the conversation.

Method: Conversation analysis was used to analyze 25 recorded phone calls, amounting to 750 minutes of data, made in a commercial call center and in the helpdesk of an international academic institute in Enschede, the Netherlands.

Results: Analysis of the phone calls reveals that causes of understanding problems between an agent and a caller who are nonnative users of English go beyond asymmetries in their proficiency with the language. Factors such as incomplete information or erroneous inference from the utterance of the partner in the interaction are important triggers for the occurrence of understanding problems. Consequently, call center agents and callers use varied repair and preventative techniques to ensure that understanding problems will not impede the attainment of the primary goal of the encounter—to resolve the product-related problem of the caller.

Conclusion: While understanding problems are inevitable in helpdesk encounters, especially those that involved nonnative users of the language employed for the interaction, such problems are hardly attributable to the linguistic differences characterizing interacting parties. It is apparent that helpdesk agents and callers are equipped with varied techniques to resolve understanding problems or to prevent their inception.

Keywords: helpdesk encounters, misunderstanding, non-understanding, conversation analysis

Helpdesk Encounters Involving Nonnative English Speakers

Practitioner's Takeaway

- Training programs designed for helpdesk agents should focus not only on technical aspects and protocols for politeness or friendliness but also on the different ways of effectively transmitting solutions over the telephone.

- Although understanding problems are hardly attributable to linguistic differences characterizing the helpdesk agent and the caller, the need to

staff call centers with agents highly proficient in the English language is still compelling.

- With the aid of conversation analysis, technical communicators should further explore the different techniques employed to deal with understanding problems in helpdesk encounters and look into the various strategies deemed effective in relaying procedural instructions over the phone.

Introduction

As customer help activities, for English-speaking markets for instance, are continuously offshored in countries where English is the main language or where there are large English speaking population such as the Philippines, India, Ireland, South Africa, and Canada (Friedland, 2005), the opportunity for two parties to interact using a common language, despite variations in the interacting parties' proficiency with the language, is high. The growth of the call center industry, however, is a phenomenon not only in developing countries where labor costs are relatively low but also in countries with highly developed economies such as Germany and the Netherlands (Holman, Batt, & Holtgrewe, 2007).

A 60-year-old man from Reykjavik challenged by the crippling complexity of feeding audio files into his MP3 player may be redeemed from the technical quagmire with a little help from a call center agent in the Netherlands. The necessary help, however, can only be delivered and received when both parties can scale the heights of Babel's tower. This is to say that the internationalization of technical help is inseparable from the need to employ a *lingua franca* for the effective transmission and reception of vital information over the telephone.

The internationalization of "technical help over the phone" precipitates the use of a common language that facilitates the effective exchange of information between two linguistically different parties to resolve a specific product-related problem. An effective way of personalizing a service in a multilingual service encounter is by providing that particular service

using the language of the client (Torras, 2005). In the Netherlands, for instance, call centers employ Spanish-speaking agents to cater to clients in Spain and Polish-speaking agents for product users in Poland. English-speaking clients are attended to by English-speaking agents (whether the agents are native or nonnative speakers of the language), hereafter referred to as NS and NNS, respectively. In some cases, however, English becomes the operational language for the service seeker from Iceland and the service provider from the Netherlands if an interaction in either Icelandic or Dutch is unfeasible.

Interactions between two individuals who are nonnative users of a particular language used are bound to encounter understanding problems (Gass & Varonis, 1991; Kurhila, 2001; Weigand, 1999). Such problems, which could be in the forms of misunderstanding and non-understanding, are often attributed to cultural and linguistic differences delineating the interacting parties (Gass & Varonis, 1991; Weigand, 1999). It is tempting to suppose that understanding problems tied to linguistic differences are caused by the interacting parties' difficulties in the formulation of intelligible sentences, their relative unfamiliarity with the target language's vocabulary, and their handicap in pronouncing words and terms. Nonetheless, researchers have also credited knowledge problems (Bazanella & Damiano, 1999) and cognitive constraints (Weigand, 1999) as critical factors triggering understanding problems.

This study focuses on the understanding problems that are bound to arise in helpdesk interactions between two nonnative speakers of English in the Netherlands.

Twenty-five recorded phone calls made in a commercial call center and in the helpdesk of an international academic institution, both located in the eastern part of the Netherlands, were used for analysis. Selection of talk segments used for analysis was initially guided by two questions upon which the study was anchored: (1) what factors contribute to the occurrence of misunderstanding in helpdesk conversations? and (2) what strategies are used to address cases of misunderstanding? Repeated inspection of the completely transcribed telephone conversations also enabled the researchers to detect instances of non-understanding and the deployment of preventative mechanisms to restrain understanding problems.

Problems with Using English as an Operational Language

Since English has become a global language in the 21st century (Bruthiaux, 2002; Burns, 2003; Crystal, 2003) permeating international politics, commerce, tourism, the academic and scholarly community (Crystal, 2003) and the World Wide Web (Hjarvard, 2004), one can expect that helpdesk encounters between two people who do not share a common language would also resort to the usage of English to proceed with the delivery and the reception of the necessary technical help. Problems, nonetheless, are expected to stifle the interaction between two nonnative English speakers. The interacting parties' lack of equal access to the language of the encounter could result in intricacies that are not endemic in interactions between native users of the language (Kurhila, 2001). The possibility for miscommunication is profound in the interaction between an NS and an NNS or between two NNS since both parties do not share a similar language and differ in terms of discourse rules (Gass & Varonis, 1991).

Deen (1995) claimed that interactional problems between an NS and an NNS or between two NNS could be caused, primarily, by cultural differences resulting in diverging expectations concerning the content, goals, and process of the communication; and secondly, by the interacting parties' limited second language proficiency. Attribution of communication flaws to cultural differences characterizing the interacting parties echoes the assertion of the critical role culture plays in shaping communication (Agliati,

Vescovo, & Anolli, 2005; Banks, Ge, & Baker, 1991; Seedhouse, 1998; Weigand, 1999).

When individuals from totally different cultural groups interact, significant variations in those individuals' level of language adeptness and the sociocultural protocols governing their discourse could spark miscommunication and misunderstanding (Weigand, 1999; Gass & Varonis, 1991). Understanding problems occurring in interactions between two individuals from totally different cultural groups, nonetheless, could not always be tied to the interacting parties' linguistic and cultural differences (Schegloff, 1987). In some cases, significant variations in the interacting parties' culture suffice to trigger communication flaws. In a study into conversations between Filipino call center agents and American customers, it was found that communication problems between the two parties could be attributed more to poor interactional discourse skills and cultural appreciation than to deficient language skills, for instance on the part of the agent (Forey & Lockwood, 2007).

Misunderstanding and Incomplete Understanding: The Scourges of Effective Communication

Miscommunication occurs when the speaker's intention does not match with the hearer's interpretation (Milroy, 1984). Weigand (1999) argued that with miscommunication, communication proceeds without the interacting parties' awareness of the fact that they are no longer addressing each other—that is the hearer becoming oblivious to his or her succumbing to misunderstanding and the speaker falling prey to his or her failure to recognize misunderstanding instantly.

The problem of miscommunication is differentiated into misunderstanding and incomplete understanding, which is further differentiated into non-understanding and partial understanding (Gass & Varonis, 1991). Viewing misunderstanding as a form of understanding that deviates from the speaker's intended meaning (Weigand, 1999) or as the hearer's incomplete or incorrect interpretation of the speaker's utterance (Hirst, Roy, Heeman, Edmonds, & Horton, 1997; McRoy & Hirst, 1995) is indicative of the confusion surrounding the concepts 'miscommunication' and 'misunderstanding'.

Helpdesk Encounters Involving Nonnative English Speakers

Weigand (1999) refers to misunderstanding as a form of understanding that is "partially or totally deviant from what the speaker intended to communicate" (p. 769). Misunderstanding emerges from the disappearance of coherence in the dialogue, especially when it is supposed that interacting individuals are cooperating and turns in the conversations are performed to achieve whatever goal precipitates communication between two parties (Ardissono, Boella, & Damiano, 1998). Bazzanella and Damiano (1999) attributed misunderstanding to four "triggers": (1) structural such as disturbances along the communication channel, (2) speaker-related such as the defective construction of information, (3) hearer-related such as erroneous inferences from the utterances of the speaker and lexical incompetence, and (4) interaction-related such as asymmetry in the knowledge of the speaker and the hearer.

Clearly, the occurrence of such triggers, as Bou-Franch (2002) suggested, are evidently tied to external sources and to the parties involved in the transaction. This assertion is tightly associated with the notion that misunderstandings do not sprout as "agentless mysteries" since interacting parties and their circumstances of interaction could be held accountable for misunderstanding (Banks, Ge, & Baker, 1991). Despite an awareness of the possibility for misunderstanding to occur, interacting individuals might still fail to detect its occurrence in the course of the conversation (McRoy & Hirst, 1995).

Non-understanding, as a type of incomplete understanding, refers to an instance in the interaction when the hearer is unable to connect information with stored information (Allwood & Abelar, 1984). The difference between misunderstanding and non-understanding is that the former ensues without the interacting parties' awareness of the problem, while the latter occurs when one party, specifically the hearer, realizes and recognizes his or her difficulty in understanding (Hirst *et al.*, 1994; McRoy, 1998; Weigand, 1999).

Weigand (1999) advanced that non-understanding, unlike misunderstanding, could not be regarded as a form of understanding since it is characterized by the difficulty on the part of one conversational party to understand the other party. Non-understanding, Bazanella and Damiano (1999) added, significantly differs from misunderstanding since the former signifies failure of comprehension in the course of a conversation. Additionally, one's failure to interpret an utterance results in non-understanding (Hirst *et al.*, 1994; McRoy, 1998), although non-understanding can also occur when a party in the conversation "obtains more than one interpretation, with no way to choose among them" (McRoy, 1998, p. 548).

Non-understanding can be distinguished into two cases. In the first case, the party who failed to understand indicates the need for 'enlightenment' after acknowledging his or her inability to understand. In the second case, the party succumbing to non-understanding opts not to indicate his or her failure to understand the conversational partner (Weigand, 1999). Non-understanding is inevitable when relevant pieces of information are missing and when a relevant strategy for connecting incoming information with whatever information is not available (Allwood & Abelar, 1984).

The Things People Do to Reach Perfect Understanding: Repair and Prevention

As understanding problems are unavoidable, particularly in the interaction between an NS and an NNS and between two NNS, it can be expected that people would resort to various strategies to reach complete understanding during the interaction. The salience of such strategies in remedying understanding problems is high in situations when people have to transmit and receive important information. The interaction between a technical service agent and a product user is an example of such situation.

Detection of understanding problems, either by the source of the problematic utterance or its recipient, prompts one party in the conversation to cooperate with the other party in an attempt to achieve understanding (Bazanella & Damiano, 1999)—primarily by correcting the problematic utterance (Kreuz & Roberts, 1993; Norrick, 1991). In the conversation analysis literature, such a correction act is synonymous with 'repair' recognized as a common strategy in dealing with understanding problems in conversational activities and in resolving difficulties in speaking, hearing, and understanding that could arise within conversations (Schegloff, 1997, 2000). The repair mechanism is composed of three important elements: the repaired

segment containing the repairable, the repair initiation, and the repairing segment (Rieger, 2003).

Schegloff, Jefferson, and Sacks (1977) categorized repair according to the conversational party responsible for its initiation: self-initiated (performed by the speaker of the trouble source) or other-initiated (the one made by any party other than the speaker of the trouble source). Researchers (e.g., Drew, 1997; Norrick, 1991; Rieger, 2003), however, claimed that self-initiated repair is preferred over other-initiated repair. Preference for self-initiated repair is hedged on two important reasons: first, such repair technique is not costly, as it requires only an extra word or phrase instead of two extra conversational turns; and second, while a self-initiated repair addresses one problem, it also prevents more potentially serious understanding problems in the succeeding phases of the conversation (Clark, 1994).

When misunderstanding arises within the conversation, the speaker of the utterance prompting misunderstanding could either initiate the necessary repair or wait for the recipient who succumbed to misunderstanding to initiate the request for a repair (Mason, 2004). Other initiated repairs, positioned immediately after trouble-source turns (Schegloff, 2000), therefore, are unavoidable because misunderstandings could just transpire anytime. Nonetheless, the source of the utterance triggering misunderstanding has the prerogative to deploy the needed correction (Norrick, 1991). When the source of the problematic utterance concurs with the request for repair, the needed correction is deployed, thereby resolving misunderstanding. However, if the repair request is rejected, communication breakdown can be expected (Bazanella & Damiano, 1999).

Repairing conversational problems can be executed by repeating a problematic segment of an utterance (Bazanella & Damiano, 1999; Bredart, 1990; Egbert, 2004; Rieger, 2003), specifying a correct alternative after the recognition of an ambiguity (Bazanella & Damiano, 1999; Bredart, 1990), replacing a vague term with clearer one (Rieger, 2003), and explicitly contrasting the interacting parties' interpretation of an utterance with its intended meaning (Bazanella & Damiano, 1999).

Clark (1994) argued that in certain situations interacting parties go beyond repairing errors since they can also resort to other strategies to deter the onset of conversational problems. With the goal of attaining common ground, as a prerequisite for the attainment of complete understanding, interacting parties, according to Clark and Schaefer (1989), should not only repair conversational troubles they encounter but should also actively pursue the achievement of understanding and the evasion of communication problems.

While repairing an error is good, preventing the error's occurrence, therefore, is more desirable. This is especially true in helpdesk encounters in which understanding problems could have severe ramifications for the effective exchange of crucial information in addressing a technical problem. Understanding problems, therefore, are better prevented than repaired since helpdesk encounters are mostly focused on highly equivocal tasks. Thus, the ideal is the achievement of correct and complete understanding for the immediate and effective formulation of the necessary solution to the product-related problem of the caller.

Clark (1994) likened conversation problems to infections that should preferably be handled adequately before they can grow into something worse. Indeed, using the medical adage, prevention is better than cure. The author further claimed that the speaker of the problematic utterance usually initiates prevention in an attempt to avert possible problems in speaking.

However, in this research, prevention is viewed as something that the other party in the conversation (primarily the recipient of the utterance) performs in an effort to attain a complete understanding of his partner's utterance. The postulation is that the recipient would clamor for an assurance that whatever message is received is correct and complete. This is unerringly true in institutional encounters (including helpdesk encounters) in which a high level of accuracy is coveted, though this can only be realized when interacting parties share the same mind frame about what is being discussed (implying that they share a common ground) eventually leading to understanding (Kurhila, 2001).

The Study

Conversational analysis (CA) was primarily employed in analyzing the data to address the research questions. CA is primarily used to study the order, organization, and orderliness of social actions, specifically those that are found in everyday interactions and in discursive

Helpdesk Encounters Involving Nonnative English Speakers

practices (Psathas, 1995). Research employing CA commences with an examination of cases (or conversational fragments). In the initial phase, analytic observations could be based on a detailed examination of a particular case, for instance, a sequence of turns apparently displaying some interesting properties (Wooffitt, 2005). In this study, for example, telephone conversation segments containing disruptions due to understanding problems were subjected to detailed analyses after the decision to focus on misunderstanding and non-understanding and on the techniques employed to repair or prevent them.

In helpdesk and/or call center encounters, conversational analysis has been applied to scrutinize the ways callers present and describe product-related problems (Baker, Emmison, & Firth, 2005; Houtkoop, Jansen, & Walstock, 2005) and the procedure of coaching callers to address their product-related problems (Steehouder, 2007). Published studies using conversation analysis to investigate understanding problems and the strategies used to deal with them in the context of helpdesk or call center encounters, however, are still non-existent.

The application of CA for this study subscribed to the five-step procedure proposed by Ten Have (2004): (1) production of materials to be analyzed (recording of the phone calls), (2) preparation of the transcriptions of the recordings, (3) selection of episodes for analysis based on several considerations (that is, the existence of a phenomenon in the different talks), (4) "making sense" of the episodes (categorizing the episodes or fragments according to commonalities), and (5) explication of the interpretation. Twenty-five recorded phone calls, amounting to 750 minutes of data, made in a commercial call center and a technical helpdesk of an international academic institution in Enschede, the Netherlands were used for this study. Both the commercial call center and the technical helpdesk of the academic institution are inbound in nature, which means that clients phone a helpdesk agent for service or information (Forey & Lockwood, 2007).

Ease in the transcription of the calls was possible using WavePad v 2.00, which enabled the researchers to control the speed of the recorded talks to precisely document the entire telephone conversation. The software also aided the researchers in textually capturing the important features of any talk such as intonation, pauses, sound stretches,

and emphases (Psathas, 1995). The 25 recorded telephone conversations were completely transcribed. However, only relevant segments from the different conversations were used for analysis, in accordance to the third step proposed by Ten Have (2004).

The selection of the relevant segments was guided by two initial questions that drove the study: (1) what factors contribute to the occurrence of misunderstanding in helpdesk conversations? and (2) what strategies are used to address cases of misunderstanding? After listening to the recordings for a number of times, the researchers detected a significant percentage of non-understanding incidences in the different recordings, precipitating the inclusion of non-understanding cases in this paper. Repeated inspection of the transcribed conversations also revealed that parties in a telephonic interaction employed not only repair techniques but also preventative strategies to handle potential understanding problems.

Misunderstanding Transcends Disparities in Language Proficiency

Understanding problems, such as misunderstanding, have been often attributed to the linguistic differences between two interacting parties. A mainstream belief is that complexities abound in the interaction between two individuals who are nonnative users of the language employed for the encounter. Analyses of the recorded phone calls, however, reveal that misunderstanding in technical helpdesk encounters between two nonnative English speakers goes beyond linguistic differences. Instead such misunderstanding is due to an interacting party's erroneous inference from the utterance of the other and to the incompleteness of information in the other party's utterance. To a certain extent, this affirms Forey and Lockwood's (2007) assertion that communication problems between an NNS and an NS are not always attributable to the flawed language skills of a party in the conversation.

Erroneous Inferences as a Cause of Misunderstanding

An important limitation of telephone interaction, Backhaus (1997) argued, is the impossibility for interacting parties to share the same environment. This lack of shared environment deprives one party of the opportunity to have a picture of the immediate milieu of

the other. When one party indicates something, it may be interpreted differently by the other, thereby resulting in erroneous inference.

49 → C Um yeah the last one I press it (1.1) nothing is hap-pening (0.6)
50 → A In system↑ (0.7)
51 → C Yeah (0.2) in sys-tem (0.2)
52 → A If you press this ef three (F3) but-tons so called so, so lowest button
53 → C yeah
54 → C A ok moment, for hard disk
55 → A Yeah, ok that's the one↓ so now you can select that one
56   A And format the hard drive of course

From the extract above, it is apparent that the caller, thereafter referred to as C, is confronted with the difficulty of locating the correct button to press. The problem was somehow remedied, as indicated by the utterance in line 49. However, towards the end of that line, he claims that nothing transpires after the execution of the act.

This prompted the agent, thereafter referred to as A, to request for clarification, in line 50, to ascertain that the caller really means that nothing is happening in the system. Such a request may have been instigated by the agent's surprise that the system still did not work after the right button was pressed. The caller's utterance in line 51 is an expression of his attempt to validate his claim in line 49, which the agent completed with an interrogative utterance in line 50.

Doubt on the part of the agent surfaced in line 52, as he inquires if the caller has really pressed the F3 button, emphasized by describing it as the lowest button. The caller's "yeah", in line 53, eventually changes to "A ok moment, for hard disk" (line 54). What does this sudden shift in tone imply? The first, with "*yeah*", is his assertion that indeed he has pressed the button that the agent has asked him. The caller's next utterance in line 54 (A ok moment…), however, is an admission that instead of pressing the F3 button, he has pressed another button—and whatever the button is, the recorded conversation does not indicate.

Going back to the agent's utterance in line 52 (*If you press this ef three but-tons so-called so, so, lowest button*), the request for clarification from the agent already

takes the form of repair which, as Schegloff, Jefferson, and Sacks (1977) claim, is another example of a repair initiated by the person other than the source of the error. The flow of the conversation is then restored, in line 55, with the agent reiterating the button that the caller should press.

Incomplete Information as a Cause of Misunderstanding

In conversations relating to highly technical tasks, the transmission of complete information is expected and recommended (Kurhila, 2001). Weigand (1999), however, pointed out that oftentimes not everything can be expressed during a particular interaction due to "economy of language" and because parties in conversations are not always aware of every piece of information crucial for attaining complete understanding. Analyses of the recorded phone calls reveal that when pieces of necessary information are missing in one segment of the conversational act the probability for one party to succumb to misunderstanding is high. The extract below exemplifies a case of misunderstanding due to incomplete information.

121 → A Then leave it er open↑ (0.2) as it is (0.7) please (0.3) give (0.2)
122   only monitor (0.3) in foot (0.5) no cable (0.5) whatever cable can be
123   taken ::off (0.3) please take it off from the monitor↓
124 → C [now]↑
125   C Now↑
126 → A Er you don't need to do now:: but in a couple of days when they come
127   and swap the monitor at your place↓

Prior to line 121, the agent asked the caller to provide the purchase date of the monitor, which could be found in the invoice for the equipment. The caller, however, claimed that he did not have the invoice with him, thus prompting the agent to inform him that he would not include the date of purchase in the set of information about the problematic monitor, in line 121 (*then I leave it er open as it is…*). In the first phase of the conversation, the agent had already collected the information that he needs to deal with the caller's

Helpdesk Encounters Involving Nonnative English Speakers

concern. The agent used his turn, in lines 121 to 123, to instruct the caller to perform a necessary action.

The caller must have interpreted the instruction as something urgent that needs to be performed right away, as evidenced by the utterance of "now" in line 124. The interrogative sounding *now* is again uttered in the caller's turn, line 125, which could be the customer's way of nudging the agent to attend to his first question, in line 124, whether he should do right away what the agent asks him to do. The misunderstood agent then positions a response, in lines 125 and 126, to the caller's inquiry.

It is possible to infer from this particular instance that the caller's notion of the time for him to act out on the articulated instruction does not coincide with that of the agent's. What is apparent is that the caller misunderstands the agent by thinking that he should do right at that moment the action of "taking off" whatever cable can be "taken off from the monitor." The deployment of "*now*" as a point for clarification by the caller becomes a signal for repair, which the agent acknowledges in lines 126 and 127.

Dealing with Non-Understanding

Whenever the inquiry on how to resolve non-understanding is shoved to the fore, the concept of repair instantly springs as a solution. Three methods of repair in the context of helpdesk encounters emerged from the analysis of the recorded phone calls: repetition and elaboration, modification, and clarification. The analyzed segments also indicated that the conversational party affronted by an understanding problem usually signifies the occurrence of the problem, which eventually prompts the source of the problematic utterance to execute the needed repair.

Repair of a Non-Understood Utterance by Repetition and Elaboration

Several studies (e.g., Bazanella & Damiano, 1999; Egbert, 2004; Rieger, 2003) have focused on the deployment of repetition as a strategy to address non-understanding problems. Repetition may be performed to implement non-repair-related acts, (Schegloff, 1997) such as emphasizing a point or proceeding with one's turn in the conversation after an interruption (Rieger, 2003), although it is also regarded as an important

strategy for the initiation of a repair (Rieger, 2003; Schegloff, 1997). Whenever the source of a problematic utterance detects failure on the part of the recipient to understand what has been relayed, the latter restates the non-understood utterance for the former to process.

6	→	C	I'm having some problems with my system and I had already complained
7			about it having some problems with the profiles and it's not working again
8	→	A	So you have problems with your profile↓
9	→	C	OK
10	→	A	You have problems with your profile is my question↑ yes, yes
11	→	C	yeah yeah

In lines 6 and 7, the caller assumes her turn to describe her problems. Since two problems were indicated (the first one with the system and the second one with the profile), the agent attempts to infer from the caller's utterance that the real problem is the second one, as indicated by the statement in line 8. Nevertheless, it is very possible that the caller subscribes to the funnel approach in problem presentation—first general (system problem), then specific (profile problem). In line 8, the agent forwards her interpretation of the problem, with the possible intention of having the caller confirmed the agent's interpretation. The caller's transmission of "OK" in line 9 instigates the agent to assume that her statement in the previous turn was not understood. The caller's utterance was regarded inappropriate, as the agent must have been expecting for a yes-no response.

The absence of a rising intonation in line 8 could have caused the incongruence between the agent's utterance and the caller's response. Apparently, the caller failed to correctly interpret the goal of the agent's utterance. Such incoherence between the utterance of the caller and the prior utterance of the agent, in line 8, triggered the latter to hypothesize that the former misunderstood her (Bazanella & Damiano, 1999). The detection of an understanding problem propels the agent to restate her previous statement and modify her intonation, from a declarative to an interrogative tone, as indicated in line 10.

The addition of the phrase "is my question" (line 10) appears to be the agent's way of articulating that her utterance in line 8 was an inquiry that should have been attended to with the expected "yes-no" response. Repair in the form of repetition successfully restored the conversation, with the caller positioning the expected response in line 11.

Repair of a Non-Understood Utterance by Modification

In some cases, however, non-understood utterances are not only repeated but also are modified. Although modification closely resembles repetition, modification of a problematic utterance, as the term suggests, goes beyond the simple restatement of the flawed contribution to the conversation. In the process of modification, the problematic utterance is partly repeated but is also restructured, reformulated, or even simplified. The structure of the statement could be reorganized, some lexical elements within the utterance replaced, or the original statement expanded. To some extent, the problematic utterance Bredart (1991) advanced is replaced with a new one to remedy understanding problem.

14	→ A	Aha and how big must it be? (1.4)
15	→ C	Hhhhh I don't know, something good, I mean, something good
16		which is now available
17	A	OK like a default size to start with↑ (0.2)
18	C	Yeah (0.2)
19	A	Something like that↑
20	→ C	Sorry↑ (0.3)
21	→ A	Like a default size that they start with because nowadays they make them
22		very big
23	→ C	I don't know just something normal but good
24	→ A	yeah ok u-hmm

In line 15, the caller appears to have an insufficient idea about the exact size of the hard disk she is referring to, as even her reply does not match with the question of the agent (*how big must it be?*). Instead she describes her "ideal" hard disk as *something good* in line 15, which is a vague description. Vagueness in the caller's utterance,

Jucker, Smith, and Lüdge (2003) claim, enables her to maintain fluency when it seems impossible for her to access the information at the point when it is needed in the conversation.

Sensing the caller's difficulty in describing the exact size of the hard disk, the agent offers her description in line 17, which the caller receives with a 'yeah' to indicate her approval of the description (line 18). However, when the agent initiates a follow up question in line 19 for confirmation of the caller's response, the caller fails to deliver the same remark positioned in line 18, and instead she signals her difficulty in comprehension, which requires immediate repair.

Egbert (2004) claims that in cases when the hearer recognizes his problem in hearing or understanding, he would usually use the next turn as an opportunity to indicate the problem through a repair initiation—in this segment, the caller's utterance in line 20. Then, it is expected that the speaker of the trouble-source turn would attempt to repair the trouble so that mutual understanding is restored and the conversation can proceed—in this case, the agent repeating in line 21 what she has said in line 17.

A minor revision, though, in the statement in line 17 is the addition of *they* and the omission of *to* before the word *start* in line 21, which drastically changes the meaning of the new sentence and which the agent could have intended to improve the clarity of her previous utterance—presumably an attempt on her part to improve the understanding of the caller by repairing the older assertion. The statement in line 17 (*like a default size to start with*) sounds more of an introductory expression—an attempt on the part of the speaker to begin a description of an item under discussion. However, the modification of that same statement with the inclusion of *they* implies that the agent means to say something else.

With the repeated but already revised utterance what she intends is to convey a bit of information about the default size of the hard disk in the beginning. More interesting, however, the second part of line 21 already contains further information (*because nowadays they make them very big*) to justify the statement in the first part of the same line. It is apparent, therefore, that the repair initiation from the caller in line 20 yields a three-part repair operation on the part of the agent: repetition of an earlier statement, improvement of the clarity

Helpdesk Encounters Involving Nonnative English Speakers

of the previous statement, and the inclusion of new information in the new statement. The execution of the necessary repair spurs the conversation to continue with the caller admitting that she has no knowledge about the size of a hard disk—in line 23.

Repair of a Non-Understood Utterance by Clarification

As previously noted, the difficulty for interacting parties to reach complete understanding is attributable to the impossibility for those parties to share their experienced environment during a telephone interaction. When it is evident to the speaker that an element or a segment of his or her utterance is not understood, he or she could clarify the troublesome part to help the listener achieve complete understanding.

```
40  →  A   So when that is there (0.4) let's::: (0.3)
            check (0.2) the issues right here (1.1)
41          where are::: we? (3.9) this formatting
            formatting formatting (1.6) is your own
42          system set up↑ um::: if you press the ef
            three (F3) but-ton which is the::: right
43          button (0.2) under the navigation
            button (0.4) or the top down button
            (0.6)
44  →  C   And which button↑
45  →  A   The lowest button↓ (0.2)
46  →  C   OK the the
48  →  A   on the front
```

After receiving a description of the problem from the caller, agent uses his turn to instruct the caller to press a button (lines 40 to 43). In line 43, the agent stresses the word *down* to differentiate it from the prior word *top* to avoid confusing the caller, since the two terms have obviously polarized meanings. The agent may have his own mental frame of the term "top down" button which is not shared by the caller in this situation. This results in the caller's difficulty in making sense of the verbal stimulus (*top down button*), thereby restraining him from immediately acting out after the instruction has been articulated. This is evident in the interrogative utterance in line 44.

However, the phrase *top-down button* may not be the only culprit responsible for the failure of the caller to click the appropriate button right away. Lines 42 and 43, which are still part of the agent's turn, abound with

the word "button". Here the speaker indicates that the caller should press the F3 button, which he describes to be the right button, and which is under the navigator button, or top-down button. It is possible that the agent's multiple mentioning of "button" has adversely affected the caller's mental processing, as it spurs him to admit the problem in line 44. This request for clarification is another indication of the caller's attempt to signal the agent that there is another troublesome utterance that requires immediate repair.

Recognizing the caller's difficulty in identifying the correct button to press, the agent instantaneously initiates a repair, in line 46, by clearly indicating to the caller that the lowest button should be pressed, which the caller acknowledges with an "ok" in the next line. The caller's deployment of an acknowledgment utterance, in line 46, further indicates that the problem is yet to be resolved. The caller's inability to state the missing term or phrase to complete his "*ok, the, the…*" utterance could be an intimation of his difficulty in locating the specified button. This consequently triggers the agent to convey a short description of the button's location in line 47. The fragment just analyzed also signifies that non-understanding could be strongly attributed to the incompleteness of information received from the speaker.

Prevention before Repair

Studies on the phenomenon of repair abound and it seems to have been regarded as the only solution to understanding problems. While it is widely accepted that errors are ingrained in conversational acts, dealing with these errors before their occurrence is important for the attainment of complete understanding. Interacting parties, Clark (1994) posited, employ preventative techniques to curtail the onset of understanding problems instead of repairing them. Analyses of the recorded phone calls also indicated that different approaches are used to prevent understanding problems in the course of a conversation.

Prevention of Understanding Problems by Requesting Confirmation of the Received Information

Requests for confirmation are referred to as "understanding checks" aimed at identifying a trouble with a previous turn's talk by proposing a solution to the trouble (Heritage, 1984). While Heritage regards

confirmation requests as repair techniques, the fragment below shows that such requests should be aptly viewed as prevention strategies since the requests were positioned before the onset of an understanding problem. This assertion is grounded on the notion of repair as something deployed after the detection of a problem (Schegloff, Jefferson, & Sacks, 1977).

13 → A Er:: (0.4) let me give you an indication it might be hhhhh (1.1) a little
14   bit less or a little bit more but for instance:: oh one moment (5.9)
15   hhhh (4.3) er well let's say ::: for a two hundred gee bee for instance it
16   might be one hundred seventy euros
17 → C One hundred seventy
18 → A Yeah
19 → C For two hundred
20 → A Yeah

Prior to the actual checking of the price through his computer, the agent first attempts to provide the caller with the necessary information about the price of an item, in line 13 (*Er let me give you an indication…*); however, upon realizing that his estimation may not be correct, in line 14 (*but for instance, oh one moment…*), he decides right away to refer to the computer to give the caller an accurate information about the price. After obtaining the price information from the agent, the caller replies by "echoing" the amount that is stated in line 17, which the agent responds to with a "yeah" in line 18. In line 19, the caller restates the size of the hard drive (*For two hundred*), which the agent again receives with an approval in line 20.

The transmission of "yeah" in this context, as Bangerter, Clark, and Katz (2004) asserted, is an indication on the part of interacting parties to acknowledge or agree with prior utterances. It is also notable that the caller echoes the utterance of the agent. This act of echoing of selected but perceived to be highly relevant information is not just a simple case of meaningless repetition but should be viewed as the hearer's attempt to prevent understanding problems from surfacing. The caller's prevention approach involves requesting confirmation of what has been received from the agent. In this segment, the caller wants to be

affirmed that he understood the caller correctly—that a hard disk of 200 gigabytes would cost him 170 euros.

Prevention of Understanding Problems by Requesting Clarification

For reasons of economy, not everything is explicitly said within a conversation (Weigand, 1999). Nonetheless, unsaid and unstated lexical items and information may be important for an interlocutor to reach complete understanding. So when one party in the conversation realizes that some items considered important in preventing understanding problems are missing in the utterance of the speaker, he would clamor to have what was left out in the utterance to achieve the real purpose of the conversation.

133 → A And I have a:: reference number for you↑ (0.3) that is (0.8) pap-pap
134   (0.2) four (1.0)
135 → C One moment (0.3)
136 → A Yes
137 → C (9.2) ((saying the phrase 'reference number' like a whisper)) and that's
138 →   for the swapping↑ (0.5)
139 → A Yeah that is for the (.) swapping↑ (0.2) yes:: (1.0) pap pap four (1.3)
140 → C What↑ (0.7)
141 → A And that is (0.3) the number (0.2) for the swapping

Prior to this segment, the agent has already informed the caller that his defective monitor will be swapped, though the actual date for the swapping is still unknown. Lines 133 to 134 contain an instance of the agent instructing the caller to take note of the number of the swapping. Presumably realizing that he needs to indicate that the number is a reference for something, he decides to write the phrase *reference number* before getting the complete number. This is evident in the same line, as the caller says the line *reference number* to himself in a rather low voice, further implying that he is dictating the phrase to himself while writing during the nine-minute pause.

In lines 137 and 138, the caller asks for a clarification whether the reference number is for the swapping that they have been talking about or for something else. Although the agent's statements in

Helpdesk Encounters Involving Nonnative English Speakers

the prior turns do not include the information that the reference number is for the swapping, it is clearly inferable that the reference number in this discussion is for the swapping. In this case, the agent must have assumed that the caller will eventually understand that the reference number is for the swapping. Perhaps uncertain about the purpose of the number to be noted, the caller inquires whether or not the number is really for the swapping. In a way, this is already the caller's approach in preventing a potential understanding problem in the latter part of the on-going conversation. The agent, in turn, cooperates with the caller by affirming his understanding.

When the agent starts to repeat the first part of the reference number (*pap-pap four*) in line 139, which has been uttered first in lines 133 and 134, the caller then deploys an indication of his inability to catch the agent's utterance by positioning a "what↑"—another manifestation of an invitation for the agent to execute a repair of his statement in line 138. This request for a repair appears a bit delayed because the caller did not even give a signal of his difficulty in making sense of the "*pap-pap four*" verbalization in line 133.

It is not so easy to claim, though, whether the *"what"* question signals the difficulty on the part of the caller in hearing the utterance of the agent in line 139 or his failure to understand the purpose of the number. The second premise, however, seems weak because it would be impossible to hypothesize that he must have not understood the purpose of the reference number since the agent has already informed him, in line 139, that the said number is for the swapping. Nevertheless, with the "what" remark from the caller, as an invitation for a necessary repair, the agent does not hesitate to execute a repair, in line 141, by telling again the caller that the reference number he is about to give to the caller is for the swapping.

Discussion

The finding that understanding problems in telephone conversations between two nonnative English speakers are attributable to non-linguistic factors (false beliefs, erroneous inferences from the speaker's utterances, and incomplete information) somehow defies the mainstream belief that flaws in such type of interaction

can be solely ascribed to linguistic differences delineating two interacting parties. This partly supports the finding of another study (Forey & Lockwood, 2007) that problems afflicting the communication between individuals not sharing equal proficiency in the English language could not always be linked to discrepancy in their language competence.

The analyzed segments also disclose that repair is usually initiated by the recipient of the problematic utterance, which then enables the source of the trouble to execute the necessary correction to contain misunderstanding, thereby restoring the flow of the conversation. This is to say that misunderstandings that are found in the data for this research are repaired through the initiative of the participant in the interaction who believes he or she has been misunderstood. With the initiation of a repair, the participant who unknowingly succumbs to misunderstanding eventually admits that he or she has just misunderstood his or her partner in the conversation—and such an admission explains for the speaker's (the source of the misunderstood utterance) instantaneous execution of the needed repair for the recipient to attain correct understanding.

It is also revealed that speakers of a non-understood utterance employ varied strategies in repairing problematic statements and lines to facilitate interlocutors in reaching the desired understanding. The segments presented further lead to the point that it is always the recipient of the non-understood utterance who displays his or her deficiency in understanding what the speaker has said. Such a display of difficulty in understanding on the part of the recipient serves as an initiation of a repair, which the speaker of the non-understood utterance may accept by executing the necessary repair or reject by moving on to a new utterance with the non-understood utterance uncorrected.

The analyzed segments, however, indicate that during helpdesk encounters, when the agent and the caller are nonnative speakers of the language used, the speaker does not hesitate to correct his non-understood utterance to help the recipient achieve understanding. In helping the listener understand better the non-understood utterance, the speaker may execute the necessary repair by repeating a non-understood utterance, by modifying the flawed contribution to the

conversation, or by describing a non-understood item or object being referred to during the talk.

In helpdesk encounters, when the agent and the caller are exchanging information relevant to the formulation of a possible solution to a particular problem or concern that instigates the call, both parties are cautious that pieces of information transmitted and received are correct and complete to ensure full understanding during the talk or consultation, or even after it. The analyzed segments show cases when either the agent or the caller tries to prevent potential cases of misunderstandings and non-understandings. The results further show that participants in helpdesk encounters attempt to prevent the inception of misunderstandings or non-understandings by requesting for a confirmation of the received information and by soliciting for a clarification.

Implications for Technical Communication

As product users are increasingly preferring telephone help over product user guides and manuals (Steehouder, 2007), it is important that organizations can satisfactorily cater to the needs of those users by providing them high quality solutions and a pleasant experience (Van Velsen, Steehouder, & De Jong, 2007). A pleasant experience may imply that the interaction between the agent and the caller has been polite and friendly or, more importantly, that the information exchange has not been scourged by understanding problems.

Product users may be expecting that substantial help can be better derived from a flesh-and-blood 'expert' at the other end of the line than from a lifeless documentation. This necessitates helpdesk agents to be effective in giving instructions, which would only be possible when they have achieved the desired level of expertise not only in troubleshooting a product-related problem but also in effectively delivering whatever information needed to address the problem that instigates the call.

Since technical helpdesk conversations are centered on an important goal, that is to solve a particular product-related problem, effective exchange of clear information is imperative. However, the attainability of the goal would only be possible with the reduction or, ideally, the elimination of understanding problems

in the helpdesk encounter. While such problems are attributable both to the caller and to the agent, the latter has the bigger responsibility of ensuring the prevention of understanding problems than the former.

An important practical implication of this assertion, therefore, is for call center management to view communication training for helpdesk agents as an integral part in the delivery of quality service. This is crucial since helpdesk agents serve as important links between companies and consumers (Burgers, de Ruyter, Keen, & Streukens, 2000). In countries where the call center occupation is new (for example, Germany, Austria, the Netherlands, and Denmark), public training courses or certification procedures are not yet fully developed or institutionalized (Holman, Batt, & Holtgrewe, 2007).

Certainly helpdesk agents are trained, within the organization, before they can start dealing with customers' product-related problems over the phone, but training programs should not only focus on technical aspects (protocols for diagnosing technical problems or procedures for using information systems to access the most appropriate solution) and on friendliness or politeness. There is also the pressing need to hone helpdesk agents' ability to deliver instructive information effectively. Given the length of time—an average of 11.5 weeks or approximately three months—for a new call center or helpdesk agents to be proficient at their jobs (Holman, Batt, & Holtgrewe, 2007), intensive and more structured, even longer, trainings should be provided and not just 'rushed' trainings for a short span of time.

Since understanding problems could just transpire at any given time during a helpdesk encounter, helpdesk agents should also be trained to be cognizant of the occurrence of disturbances in the conversation and to be equipped with appropriate strategies to mitigate or prevent understanding problems. Adeptness on the part of helpdesk agents to prevent understanding problems or to remedy the flawed segments of the talks using the most appropriate repair strategy would unquestionably be beneficial for the efficacious exchange of information within the context of technical help.

Although understanding problems, as indicated by the analyzed fragments, are hardly attributable to linguistic differences characterizing the helpdesk agent and the caller, the need to have competent users of a

Helpdesk Encounters Involving Nonnative English Speakers

particular language, though not necessarily native users, as helpdesk agents is compulsory. Effective information delivery in a helpdesk encounter—necessary to address customers' concerns (Pontes & Kelly, 2000)—is undeniably tied to the proficiency of the information source to relay the desired information in a language that would also enable the recipient to adequately process any information obtained. Such linguistic proficiency would expectedly afford agents with the skill to cope with understanding problems. This is illustrated in one of the fragments, in which a nonnative English speaking agent, though proficient enough in the language, took the initiative to repair her utterance upon realizing that the conveyed statement was not understood.

While the present study has initially identified the causes of understanding problems in helpdesk encounters involving nonnative speakers of English, an exhaustive identification of the instigators of misunderstanding and non-understanding is constrained by the quantity of the data used for the study. Causes of non-understanding in helpdesk encounters are certainly aplenty and may have not been present during the recorded conversations. The current study could not also claim to have inventoried the different strategies people used to address and to prevent misunderstanding and non-understanding. Nonetheless, this study provides an opening into the relatively uncharted research domain of understanding problems in helpdesk encounters.

Future studies could consider both taking an in-depth look into the dynamics behind the inception of understanding problems in helpdesk encounters based using a *lingua franca* and surveying the ways people deal with those problems. Knowing the different techniques used to deal with understanding problems could be a gainful pursuit for those in the technical help industry. Training programs designed to enhance call center agents' competence in handling understanding programs could capitalize on the different methods effective in preventing or, when unavoidable, repairing misunderstanding and non-understanding in the interaction between the agent and the caller.

While studies into the effectiveness of written procedural instructions abound, research interests on the effectiveness of procedural instruction delivery over the phone could be further explored. Focusing on the techniques employed to effectively convey spoken instructions is one thing worth pursuing

using conversation analysis. With the gradual shift in information-seeking behavior, from consulting a paper-based product documentation to phoning a designated service center for a particular product to acquire the needed help, the indispensability of conversation (or even of discourse) analysis as a research technique for technical communication should be unquestionable.

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New Modes of Help:
Best Practices for Instructional Video

Jason Swarts

Abstract

Purpose: To examine instructional video as a vernacular form of technical communication serving readers unwilling to consult print documentation. Provide a set of best practices for creating and delivering video based on analysis of existing, highly-rated content on YouTube.

Method: Assessment of a criterion-based (that is, software type) sample of 46 instructional videos stratified by user ratings. Inductive coding of shared within-group (that is, "good," "average," "poor" rating) features, including genre conventions, rhetorical work, and communication design qualities.

Results: Good instructional videos share qualities that appear to account for their strong user ratings and distinguish them from average and poor videos. Good videos spend significant time introducing an instructional agenda and forecasting goals and steps. In this manner, they function like video equivalents of printed documentation. Good videos also focus on demonstrative content, in which steps are both performed and explained or elaborated. By contrast, videos with lower ratings focus as much or more on simply doing the steps without explaining or explaining without doing. Good videos were also designed so that their instructional messages could be easily identified and accessed, easily understood and applied, and so that the messages were engaging and encouraging.

Conclusions: Designers of instructional video can successfully apply lessons learned from the design of instructional content for print while taking into account the medium-specific affordances and constraints of video and sound. The potential for rapid, viral distribution via social media channels should also inform the selection and design of instructional content.

Keywords: instructional video, help documentation, communication design, assessment

Practitioner's Takeaway

- Like good printed instruction, good instructional video begins with an introduction that frames the lesson to be learned.
- Good instructional video spends more time demonstrating steps (doing and explaining) than either doing or explaining alone.

- Good instructional video delivers content whose message is easy to locate and access, easy to understand and utilize, and is engaging and reassuring.
- To compete for readers' attention, deliver lots of highly specialized content via social media channels.

Best Practices for Instructional Video

In a Do-It-Yourself World, People Still Don't Read the Manual

In a recent feature story, writers at *Wired* magazine described a growing population of Do-It-Yourself (DIY) hobbyists who are taking on technically complex tasks in the name of pure enjoyment. Projects range from building bike computers and water purifiers to specialized task-based uses of software like configuring a database or creating a mail merge file. These hobbyists have developed keen interest in instructional content, generating their own in the form of wiring schematics, code snippets, procedures, and instructional video. Without question, some user-generated instructional video is poorly made, but some reputable producers are starting to emerge as well. Companies like Adobe and Techsmith already create their own video-based instructional content. And judging by the view count, it gets watched. The question this article seeks to answer is how do people make good video content? The answer begins with an examination of what motivates the use of video as a form of instruction.

The simple answer is that people need instruction. Certainly, this is true for project-based uses of technology but for mundane technologies as well. There are many occasions during the day when we must accomplish something with an unfamiliar technology: we must configure VoIP to call a colleague; configure a PDF form to be editable, or configure online calendars to be shareable. The software itself has gotten easier to use, as more of its complexity is pushed below the interface, and the people using it are increasingly savvy users who are willing to tinker and bootstrap themselves to functional proficiency, but there remains a need for instructional content.

Despite the need for instruction, users still steadfastly refuse to engage with traditional printed manuals. Novick and Ward found that when participants in their study were given the option to "ask others," "use online help," "solve without assistance," or "use printed manual" when solving a problem, an underwhelming 20% of problems were solved using the manual. Most participants gravitated toward other people (90%) and online help (75%). The reasons cited included better navigability, greater precision of help, and greater searchability (Novick & Ward, 2006a, p.

16). Participants also cited the "unstylish," "boring," and "antiquated" look of printed manuals as off-putting.

Following up on their study, Novick and Ward examined what users say they want instead. Most wanted a better way to locate solutions to their problems (Novick & Ward, 2006b, p. 86), more appropriately level-matched explanations (Novick & Ward, 2006b, p. 87), less extraneous information (Novick & Ward, 2006b, p. 87), solution-based indexing and access (Novick & Ward, 2006b, p. 87), and correct and comprehensive information. Instructional video, both because of its multimedia format and its mode of delivery is an appealing possibility.

Unlike most manuals, videos seem more informal—the narrator appears to be speaking to us. Videos are also frequently entertaining. They are deliberately encouraging, sending assurances that the viewers can easily apply the lessons. And they are seductive in the sense that advertising and marketing writing is (see Khaslavsky & Shedroff, 1999).

Video also offers a richer channel of communication that allows simultaneous broadcast of textual, video, and auditory information. Circulation on clearinghouse sites like YouTube and Vimeo, fueled by the hordes of amateur and professional videographers make the volume and reach of this content unmatchable. The energy and enthusiasm that amateur technical communicators bring to the most idiosyncratic tasks simply would not be possible except in a context of mass collaboration (Jenkins, 2006; see Shirky, 2008).

More pointedly, video addresses an underlying information design problem that Novick and Ward (2006ab) uncover while still arguing the value of the structural advantages of in-print documentation. One approach to understanding the problem is through Carliner's three-part framework of information design (2000). He proposes three overlapping areas:

- **Physical Design**: Design that directs users to a message.
- **Cognitive Design**: Design that helps users understand a message.
- **Affective Design**: Design that helps users engage with and feel comfortable about a message.

Jason Swarts

When Novick and Ward's participants cite navigation and search problems, they are really uncovering physical design problems. Headings, titles, and indices have limited ability to direct users to pertinent content. When the participants noted problems with level matching and amount of detail, they are pointing to cognitive design problems. The information is inflexibly pitched at a level above or below where they expect it to be. When the participants mentioned stylistic problems with the "boring" and "antiquated" look of the printed manual, they were expressing affective design problems. There is little about the style of the manual that keeps them engaged. Each of these problems persist, in part, because of the relative inflexibility of the print manual as a mode of delivery, which is one aspect of information design that, although implicit in Carliner's framework, deserves more deliberate attention. That these predilections lead to increased consumption of alternative instructional content (including video) holds true despite the superior ergonomics of printed texts as an instructional medium (see Swarts, 2004).

Instead of meeting their needs for instruction with print documentation, however, users are shifting those needs elsewhere, toward forums and video. Addressing physical design issues, video provides procedural information in multiple simultaneous channels (text, moving image, sound), creating complementary repetition that can help users isolate instructional messages. Unlike a book, however, videos have fewer options for navigation. It is not easy, for example, to locate step 3 in a 5-step video process without first watching steps 1 and 2. Video addresses cognitive design issues by combining various modal displays of content to allow richer details of the procedure to rise to the surface. Users can attune to the spoken message, which will have different details than what is visible in the video or the accompanying text. In this way, videos help address issues like a lack of detail and level matching. Finally, videos can address affective design issues as well. For some, videos are engaging and easier to consume than a book. Further, narrators, perhaps better through spoken discourse than written, play an important role in encouraging and motivating potential users.

The delivery medium, too, is beneficial in that it encourages short, easy-to-produce videos, findable by users through filtering and sorting. These services encourage rapid creation and consumption of copious amounts of specialized content, shaped only by hundreds of thumbs up and down. Eventually, through sheer volume and filtering and sorting, level matching and detail problems will be addressed. We have something to learn from this shift and one step in that direction is to see what makes these videos useful and engaging so that we can become effective producers of them. Specifically, the questions driving this research are:

1. What genred forms and rhetorical work distinguish "good" instructional videos from "average" and "poor" ones? In other words, what did these videos attempt to communicate and what uses did they support?
2. What communication design features distinguish "good" instructional videos from "average" and "poor" ones? In other words, how do these videos differ in expression?

Method

A research assistant and I drew a criterion-based sample of 46 instructional videos from YouTube (IRB exempt). We searched for videos across four different software types (video editing, text editing, image editing, sound editing) matching the search "tutorial" or "how to." These software packages were chosen to neutralize a bias toward one kind of content that might encourage instructional video with particular features. We then sorted the results to get the most watched videos, and from this ordered list collected a stratified sample of the first four videos rated 3.5-5.0 stars, the first four rated 2.6-3.4 stars, and the first four rated 0-2.5 stars across the software types. The sampling occurred before YouTube changed its rating system from stars to a like/dislike format. For all categories except the lowest rated, we located videos with thousands of views and hundreds of user ratings. For the lowest rated videos (which YouTube search appears to bias against), we selected videos with at least 25 user ratings. As a reliable assessment of video quality, user rating are problematic, but our assumption was that since users come to the video driven by actual need, in aggregate, the average positive or negative user ratings should reflect genuine satisfaction or dissatisfaction.

Best Practices for Instructional Video

Building from Carliner's tripartite model of communication design, we developed a two-step coding scheme to first uncover similarities and contrasts in genred form and rhetorical work between "good," "average," and "poor" videos. The second coding pass differentiated communication design features, among the same videos, within Carliner's framework. Drawing on experience and advice from popular textbooks on procedure writing, the following codes emerged for the first pass:

- **Introduction**: Any section of the video offering an overview, warnings, or list of necessary equipment.
- **Step**: Any section of the video outlining or demonstrating the actions one carries out in order to complete a task.
- **Conclusion**: Any section of the video offering closing remarks.

Simple reliabilities calculated with a second coder yielded agreement of 92.7%.

The second coding pass differentiated kinds of rhetorical work:

- **Explanation:** any instructional talk that is not accompanied by actions taken to complete the step (that is, talk with no onscreen action).
- **Demonstration:** any movement within the frame of instruction intended to illustrate a step—accompanied by explanation (that is, action plus talk).
- **Doing:** any movement within the frame of instruction intended to illustrate a step—not accompanied by explanation (that is, action plus no talk).

Simple reliability with a second coder was lower, at 78%. But after modifying the code definitions, many coding disputes were resolved, resulting in an adjusted simple reliability of 90.8%.

The third coding pass examined communication design features, drawing on Carliner and on studies of multimedia and information usability (Albers, 2008; Grice & Ridgway, 1993; see Mehlenbacher, 2002):

- **Physical Design**: concerned with access, viewability, and timing.
- **Cognitive Design**: concerned with accuracy, completeness, and pertinence.
- **Affective Design**: concerned with confidence, self-efficacy, and engagement.

The first part of Carliner's framework, physical design, is about moving the reader/user's eyes to relevant content. For this reason, issues such as access (for example, headings), viewability (for example, video resolution, audio quality), and timing (for example, speed of the video, pace of the narration) are influential. Problems at this level prevent viewers from navigating to the content, just as tables of content, subject headings and indices might inhibit navigation in a book. The cognitive design concerns include accuracy (that is, whether the video contained any errors of fact or execution), completeness (that is, whether the video appears to cover all expected topics), and pertinence (that is, whether the video is edited to include only relevant information). Here, we were concerned with issues related to level matching and providing sufficient details. Failures at this level may prevent viewers from understanding or applying what they have watched. Finally, affective design touches on issues of comfort, engagement, encouragement, and motivation. Qualities that matter are: confidence (for example, whether the narrator inspires confidence in the outcome of the lesson), self-efficacy (that is, whether the narrator or content encourages users to believe in their ability to succeed), and engagement (that is, whether an attempt is made to capture and hold attention). These affective qualities, while not directly overcoming problems of boredom or perceived lack of style, nevertheless work to engage the users, which is the underlying problem. A fuller discussion of the analytic process and assessment rubric is in Morain and Swarts (2012).

This study, like all studies, has limitations. First, it should be noted that a sample of 46 videos does not lend itself to robust significance testing and the relative proportions reported in the next section should only be understood to indicate the relative strength of the patterns uncovered. Further, an additional dimension of usability that is not explicitly addressed here (although implicitly referenced throughout the analysis) concerns

Jason Swarts

the ergonomics of video compared to print. Quite simply, there are some uses for which text is better suited than video. For the purposes of this article, a sample video analysis will follow in order to summarize the qualities of good instructional videos.

The Rhetorical Structure of Instructional Video

By in large, good instructional videos tended to resemble procedures in print. They had a similar form and did similar rhetorical work. To understand what this means, Farkas (1999) offers a useful starting point. Although writing in 1999, he presciently observed that the structure of procedures he elaborated would constitute a "set of relationships, a consistent logic, that […] underlies all forms of procedural discourse" (1999, p. 42). His model describes a relationship between states (desired, prerequisite, interim, and unwanted) and the actions needed to navigate them (human actions, system actions, external events). All procedures describe how someone uses a technology to achieve some result (desired state) by first establishing where the task starts (prerequisite state) and how it proceeds (interim states) toward conclusion.

The first coding pass revealed a similar structure, in which introductions were places to talk about the goals of instruction as desired states and about prerequisite states or conditions that needed to be met prior to following the rest of the video. Interim and unwanted states plus the variety of human and system actions that required negotiation constituted the bulk of the procedures in the form of steps. Significantly, Van der Meij, Karreman, and Steehouder (2009) find Farkas's model of procedures viable today; although, they note that "[i]n only three decades, a predominantly paper-based approach to instructing novice computer users has evolved into a multimedia, multichannel support system for multiple audiences" (Van der Meij *et al.*, 2009).

The empirical evidence bears out Van der Meij *et al.*'s, observation. Across all videos, without regard to user rating, the proportion of introduction to steps to conclusions showed that approximately 73% of all video content (measured in seconds of footage) was devoted to steps. Of the remaining 27%, approximately 2/3 of

that (~18%) was devoted to introductory material. 1/3 or 9% was given to conclusions, which consisted of re-iterations of what had been accomplished or, more often, exhortations for viewers to "rate and subscribe" to a particular video channel. Good and average videos devoted approximately the same amount of time to introductory framing, steps, and conclusions. Poor videos, however, devoted more time to steps and less time to introductory framing. Notably, they often did not start with an overview of the instructional goals: the desired state to which a set of procedures should be leading. Neither did they offer much context.

There are also differences in the breakdown of rhetorical work performed, which is a clearer indicator of what these videos are doing. Van der Meij *et al.* (2009) have noted that, over the last 30 years, there has been a shift in procedural content away from declarative expressions of information that would have been appropriate for what Janice Redish called a "read to learn" audience toward procedural information that is more appropriate for what she has called a "read to do" audience. The coding distinguished these functions by differentiating "explaining," "demonstrating," and "doing." The latter two (demonstrating and doing) acknowledge that, in video, the presentation options are not simply declarative or procedural. One can demonstrate procedures and explain the process simultaneously, using the audio to complement the visual (see Bishop & Cates, 2001) or let one's actions speak for themselves by doing without explaining. In printed procedures, the distinction between demonstrating and doing is less vivid.

On average, the videos were comprised less of explanation (31% of coded content) and more of demonstration (51% of coded content). The amount of doing showed up in lesser amounts as well (18%). Broken down by user rating, we see a different pattern. The poor videos had the most doing and the least amount of explaining. Good videos had more explanation, more demonstrating, and less doing. When demonstrating, the narrators of good videos were explaining what they were doing and why. The explanations turn out to be fairly important, as well, for contextualizing the procedures in larger tasks that users might be engaged.

Best Practices for Instructional Video

A Typical "Good" Video—Communication design features

While difficult to find an instructional video that exemplifies all of the qualities typically shared by good videos, one titled "Movie Maker Video Editing Tutorial" (http://www.youtube.com/watch?v=JZXK68NS7gU) comes close on most accounts. It is certainly good enough to point to key communication design features from which we can draw out best practices, using the modified version of Carliner's three-part information design framework discussed earlier.

Physical Design Qualities

Assisting with navigation, this video uses title slides to demarcate the transitions between sections. While not actually functioning as bookmarks, the title frames are visually distinct and remain on screen long enough to allow someone moving the progress bar to use the title frames as entry points. Another accessibility aid is that the video's creator cropped the instruction window so that all content captured is pertinent to the instructional message (Figure 1). By reducing the amount of extraneous visual information (also a pertinence issue), the viewers can more easily attune to the information that matters.
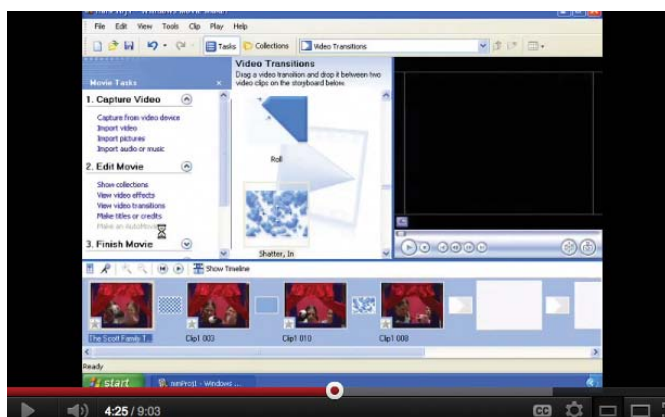
Figure 1. Still Screen Showing a Cropped Workspace

Stripping away extraneous information, however, is not necessarily the same as drawing a viewer's attention to important content. Doing this requires visual and verbal "pointing," the use of deictic language to direct attention. Annotations like arrows and callouts, words like "this," and "that," and even zooms and pans all serve to direct attention. They point (sometimes literally) at the content that is important. In videos rated lower, the verbal pointing largely consisted of empty or ambiguous language such was "click here" or "get this thingy." The more precise deictic language in good videos relied on interface terms such as "click on the timeline" or "drag in your clip from the media bin."

Viewability also mattered—often, problems with video and audio quality were the only factors that explained a low user rating for otherwise decent content. This video bears evidence of someone's experience and skill at shooting video and creating audio. Shaky or blurry video and garbled or otherwise flawed audio can get in the way of an instructional message. Sometimes poor video literally prevents users from seeing tool or menu selections (Figure 2).
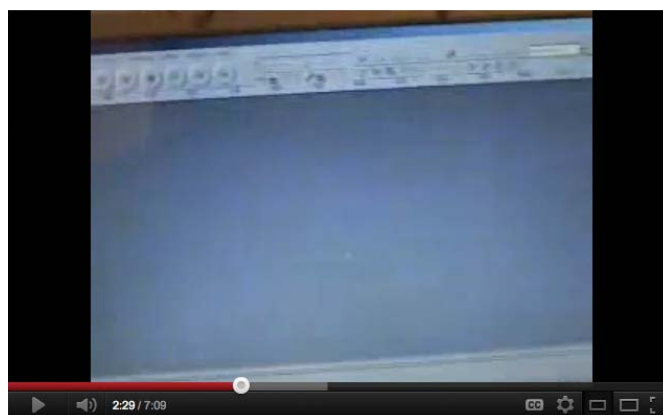

Figure 2. Still Screen Showing Blurred Tool Bars from Poor Video Production Techniques

The timing is also good. Since instructional information is coming through different channels, they ought to complement each other. Here, the steps are announced before they are shown. So, when the narrator tells us to open the transitions pane and make a selection, we hear the step a split second before we see it, long enough to get mentally "set" for an action.

Although the video introduces its own navigation problems, the overlapping use of moving image, still image, and narration complement and reinforce one another to make navigation somewhat easier.

Cognitive Design Qualities

First, the content of this video is accurate. There are no errors of fact—users were not told something about Movie Maker that was untrue. Neither were there any errors of execution—all actions taken were met with the expected results. Usually, viewers knew this to be true because the intended results were announced prior to the action being taken.

More importantly, however, the video had a sense of completeness to it. Viewers knew the goal from the outset. At the start of the video, the title frame announces that the goal is to "create a digital movie with Movie Maker 2" (Figure 3).

Figure 3. Still Screen Showing Announcement of Instructional Goal

Right away, the viewers know what to expect and perhaps can create a mental map of the necessary steps. Each title frame announces a new objective, such as importing video, adding clips to the timeline, and trimming clips. While not present in this video to the same extent, other good videos featured narrators explicitly cueing the viewers by announcing "next we will X" before making good on the promise. The point is that good videos establish an organizational superstructure, just like an effective manual would do. Sections of the video are organized around tasks, also like effective task-based documentation.

Finally, the instructional message is clarified by retaining only pertinent content. This video shows clear evidence of planning and editing. It appears to have started from a script or storyboard. The shots are carefully selected. No extraneous visual information is included. What explanation is offered usually extends the lesson to show its broader applicability. For instance, when talking about trimming video clips, it is mentioned that the same technique can be used to trim audio.

Finally, the redundancy of the audio and video is worth noting as a way of addressing level matching problems. Together, both channels offer slightly different details about the content. Where the audio channel calls a play by play of the actions, it is also used to elaborate the content and build a different kind of understanding than would be possible through the video alone.

Affective Design Qualities

Finally, the video exhibits a number of notable affective design qualities. For one, the video is actually enjoyable to watch. While the task (video editing) is probably more inherently enjoyable than other kinds of tasks, there is a level of seduction to this video as well. The video is effortless to watch and the moving images are enough to hold attention for at least a short amount of time. Further, the narrator appears to be aware that some level of content redundancy is necessary. Since the content goes by quickly, some important details, such as where clips go, how to trim them, and how to add transitions, get repeated. This repetition is reassuring that important points are not missed. The combination of text annotations, transitions, and sharp technical production makes this video looks stylish, professionally assembled, and credible, which lends confidence that the content is good.

Another notable quality is the narrator's actions and tone, particularly where those actions and attitude inspire confidence and encourage viewers to attempt what is shown. This narrator is either working from a script or has rehearsed the delivery. Actions shown are smooth, with no halting between them. There is no indecision when selecting tools or menu options. The narration itself is cool and even-toned. This is the voice and actions of someone who knows what he is doing. They exude confidence, which in turn has a positive effect on viewers, inspiring them to confidence as well.

Best Practices for Instructional Video

Best Practices for Creating Instructional Video

Based on the preceding analysis, which does capture most features common to good videos, we can see possible best practices emerge in the form of technical proficiencies, benchmarks of performance, and rhetorical considerations that will be the focus of this section.

Make the Rhetorical Structure of the Video Visible and Persistent

This means making visible the sections of the video, whether as breaks between objectives, resting points in tasks, or places where viewers are asked to pause and do something. The video analyzed above used title frames (see Figure 3) to divide subtasks. Other strategies may include actual, persistent onscreen titles, or simple black frames to visually signal a shift in topic. Not every viewer will want to see each video in its entirety. If people only look at enough content to satisfice (Redish, 1993, p. 17), then they will use whatever means are available to skim content and pick out what they want. In most videos, viewers are limited in their skimming abilities to moving the progress bar forward and backward. Persistent titles or clear breaks between sections will be visible using this skimming technique.

Test the Timing of the Audio/Video to Ensure Ease of Following

The Web is littered with videos that either go too slowly or too quickly through tasks. Keep the pacing just slower than what would characterize a typical competent performance. More importantly, as the video analysis showed, audio should slightly precede the video. When an action is demonstrated, it should be verbally announced a moment before. To the casual viewer, the audio and the video will appear synchronized, but in effect, the preceding audio will help attune the viewer to the screen and to the appropriate area of the interface.
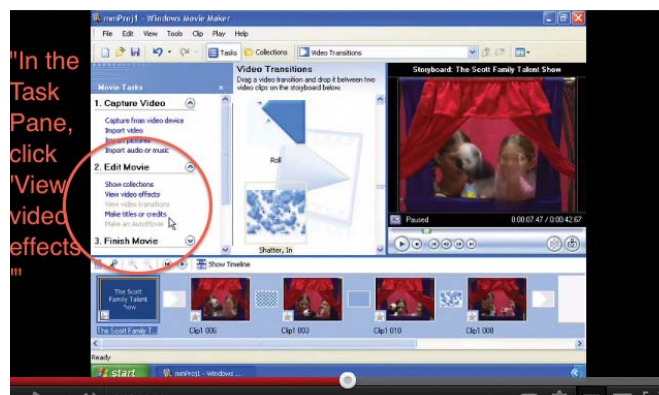

Figure 4. Still Screen Showing Cursor Hovering Near Area of Screen Announced in Audio

Use the Recording and Editing Tools Well

If one quality stood above others as provoking the most ire from users, it was a demonstrated lack of skill at using the recording tools. Obviously, egregious incompetence such as using handheld cameras for screencasting and distorting aspect ratios should never be tolerated. But even little mistakes, like an annoying, persistent hum stemming from using a microphone with weak output signals, slight blurring of text from recording at an inappropriate size or because of a low sampling rate are equally problematic. The point is that viewers notice these warts, which aggravate without regard for the actual magnitude of the error.

Record in HD or Near HD Quality

Learn to capture high quality audio and to set the sample rates and microphone levels to get crisp, high resolution audio. The higher the quality is, the better it plays with other sounds and video. Degraded audio is an outright obstacle to hearing instructional messages. Similarly HD or near-HD quality video is a must. Viewers will frequently want to scale up or down the video to fit within a workspace, and going up or down in size has its own problems and limits. The pixels can only be jammed together so closely or stretched so loosely, but it is better to be a problem at the extremes than at points between.

Consider How Modes of Communication Complement One Another

There is growing awareness that some forms of content are good for certain kinds of messages and for

supporting certain kinds of thinking (Bishop & Cates, 2001; Horn, 2004; Kress, 2004), and it has become common in technical communication textbooks to discuss the incorporation of images by noting how they can be clarified with text. Explore the ways that different modes interact and appropriate one another (Hull & Nelson, 2005). Text clarifies the abstractness of video. Text also segments and organizes video. Still images emphasize detail by holding it in place. Audio allows eyes-free action while signaling shifts in topics.

Get It Right the First Time

There are plenty of bad videos on the Internet that don't get things right, and their user ratings show it. There is little that is more harmful to one's credibility than to demonstrate a step and fail, produce a system error, or get a different outcome than expected. Worse still is to either ignore or dismiss the error with a casual "nevermind, it just works" or "I don't know what that was." Again, these are egregiously poor choices, but simple errors are almost as damaging. Wrong menu selections, wrong tool selections, even momentary hesitations can disrupt learning by diminishing the narrator's credibility or by making the task seem more difficult than it is.

Start with an Overall Structure, a Goal, and a Set of Objectives

Be sure to have each and to communicate them clearly and often. A clear goal and objectives that mark off progress will communicate to the viewer what the beginning and end state of the video are supposed to be. This way, viewers can judge progress through the task and begin to anticipate where actions are headed, so that any gaps in detail can be filled. The goals and objectives may also play a significant affective role in motivating viewers to continue through the tasks to their completion.

Think in Cinematographic Terms

Techniques like master shots, long shots, medium shots, scenes, cuts, and montages all matter in the creation of videos (Gillette, 2005). Shots vary by the amount of context shown, the characters shown, and the level of detail. A master shot showing the futuristic cityscape at the beginning of *Blade Runner* establishes a context for action, which shapes viewers' understanding of the

characters. In instructional video, a master shot of the workspace might, likewise, establish a context of action, provide a sense of constraints and affordances. Other kinds of shots show characters with little detail but set in a context of action (long shot) or with greater detail to say something about their character or motivation (close up). Similar shots work in screencasting as well.

Figure 5. Still Screen Showing a "Close Up" Shot of Important Tools on the Interface

Long shots that show toolbars and menus establish the "characters" and their roles in the tasks. Showing a tool at the beginning is a promise (to refer obliquely to Anton Chekov's gun) that it will play a role later on. Other analogous concepts like scenes and cuts help organize the video into tasks or actions, with objectives that are achieved in order to advance the video. Cuts delete action, compress time, and compress space to create connections between actions that would otherwise be too difficult to show in real time. Planning should then also include moviemaking techniques like storyboarding, scripting, and shot plans.

Use Strategic Redundancy

For viewers who listen to the content instead of watching, repetition helps key points stick, but even if someone is both listening and watching, a different kind of redundancy is merited. Some of the more effective videos relied on text annotations, drawings, spotlights, callouts, still screens, and spoken comments to clarify content. Selecting a tool on the screen provides one kind of information, but adding a callout draws extra attention. Showing an input value or a slider value provides enough information, but magnifying that

Best Practices for Instructional Video

content with a zoom or pausing it with a still screen or speaking the values aloud is a special kind of redundancy that underscores the message. Of course, not all actions need callouts or stills or even narration. Those that are inconsequential, obvious, or repeatedly performed do not need reinforcement after a while (if at all) and to do so would diminish the impact of the video by filling it with extraneous detail.

Rehearse the Script

One quality of the good videos is that they feature narrators with pleasant voices. It is probably not the case that these narrators are anything other than employees, but some of them may very well be actors hired for the videos. The particular combination of good looks and good voices suggests, at the very least, that some attention was given to the matter. Poor videos, not surprisingly, featured less sonorously-pleasing narrators. When the narrator was not the source of the problem, a lack of preparation was. Stutter-starts, indecision, rambling, and lack of enunciation all impact quality. A narrator who speaks without engagement or confidence does little to inspire confidence or engagement in the listener. Narrators who speak more confidently, flawlessly, with more inflection, with better enunciation, and with obvious practice, inspire trust and motivation.

User Test a Sample of Audio for Engagement

Clean it and optimize it but don't overdo it. There is such a thing as audio that can be too perfect. The warm, comforting voices of our own lives are hardly flawless. Treasured recordings are pocked with skips and fuzzy background static. We could go so far as to say that these are the styles that make our voices human-like, so it may come as no surprise that one of the qualities correlated with effectiveness in online instruction is the perceived humanity of the narrator (Clark & Mayer, 2008, p. 177).

Recognize that Your Credibility Is Being Scrutinized

While a video may bear the endorsement of a company, lending instant credibility, some assessments of credibility will be based on more intangible aspects of the video. The previous two best practices indicate how the level of apparent practice and enthusiasm and other sonorant qualities of the narrator's voice appear to influence engagement, but they also affect credibility. A lack of seriousness, halting delivery, trailing off at the ends of sentences, and monotonous delivery can easily lead a viewer to question just how knowledgeable the narrator is. And if that skepticism leaks in, what sort of impact will there be on the perceived credibility of the video? Likewise, technical ability appears to matter. Slick production, effective editing, post-production touch up, transitions, and good quality audio and video are reassurances that someone took the time to make a good video, and that kind of effort on the front end appears to suggest credibility and competence.

Seduce the Viewer

In a provocative piece about marketing writing and information design, Khaslavsky and Shedroff (1999) argue that the design of content can "seduce" an audience and keep them engaged. The same, it appears, applies to instructional video. The authors argue that seduction has three basic steps: make a big promise of something to be learned or accomplished, proceed incrementally by making and fulfilling small promises along the way, and then make good on the larger promise. Good videos followed this formula. These videos almost always started with a statement about what viewers would learn or accomplish. Doing this assures the viewers that they are about to watch something worthwhile. The videos then broke down the big promise into little ones that all clearly and inexorably led to the promised outcome. Finally, these videos (like most videos) made good on the overall promise.

Reassure the Viewer

While some viewers will seek out instruction, relatively sure of their ability to follow along, some will need reassurance. They will want to know that the task is not difficult, that the instructions presented will lead to a successful outcome, and that the task will be as easy as demonstrated. In other words, well designed instructions give some attention to a viewer's self-efficacy (see Bandura, 1977). Obviously a correct and error-free demonstration will show viewers that the steps, if followed, will result in a successful performance, but there are other less obvious aspects to control as well. Soothing reassurances from the narrator are helpful. Confidence in delivery and actions will assure viewers

that the performance is going to help them. Elimination of extraneous detail will make the object of instruction appear simpler.

The Delivery Matters

In closing, it is worth pointing out one more quality to online instructional video that likely makes it appealing: the mode of delivery and the model of production. In this age of user forums and online user communities, it is clear that the consumers of documentation know what they are looking for and will ask for it. Of course it is impractical for printed documentation to respond to the potentially limitless specificity of users' needs. Producing and revising print documentation, even if delivered online, is costly and time consuming. Yet, one thing learned from the popularity of forums is that customizable documentation is welcome and perhaps even easier to produce when the effort is distributed across a user base.

Users Know What They Want
If users are driven to documentation to solve problems or to accomplish highly specific tasks, there is some likelihood that these are unanticipated (or unanticipatable) requirements. Let the users drive the development of some content. Printed manuals, delivered online, have a place and they will find the right audience, but short videos that address specific issues may be a more effective way to reach users. Let users suggest topics and tasks for which quick videos can be created.

Organize from the Bottom Up when the Top Down is Infeasible
If there is one point that comes up continually with online content, it is that sound information architecture is an essential quality of usability. Where people differ is on the details. Public intellectuals like Clay Shirky, for instance, would argue that content should be organized from the ground up, by the people who use it (2005). Let users create the paths through the content and mark it with the details of their interaction: marks of quality and key terms, for example. Information architecture proponents like Peter Morville and Louis

Rosenfeld (2002) argue a similar approach, but offer a more cautious outlook, suggesting that some top-down organization is essential to ensure that information can be found or contextualized properly. Social media outlets like YouTube will certainly provide some ways for users to search and filter content, but even without, it would benefit the user base to host video content through a system that allows a robust range of searching, filtering, and tagging.

Make Lots of Content
After just a bit of searching through the databanks of YouTube, one quickly realizes that among the best rated and most frequently viewed pieces of content are fairly specific instructions that have little to do with either learning the features of a software or learning a generic task. One is as likely to see videos on "how to change hair color with the masking tool" as videos on "how to use the masking tool." This is true for videos on all kinds of subjects. If we are talking about producing print/online documentation to address this potentially limitless variety, we quickly run into problems of scale, organization, and navigation. With instructional content in a social medium, there is less of a problem. Generate lots of highly specific content and let the users sort it out. This is a lesson that some forum managers are learning as well. I am not suggesting that videos be made on a 1-to-1 ratio of questions asked to videos made. That's what a forum is for. What a video might be for is addressing issues that multiple people ask about. A robust tagging vocabulary would then help users find what they are seeking.

These suggestions for creating videos coincide with advice that teachers of technical communication, public speaking, document design, web design, and editing make to their students every day. The instructional video simply presents a rhetorical performance about which all these topics are uniquely pertinent.

Best Practices for Instructional Video

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Current Overview of Academic Certificates in Technical and Professional Communication in the United States

Lisa Meloncon

Abstract:

Purpose: This paper provides a current overview of graduate and undergraduate academic certificates in the U.S. It details information about the current number of certificates, requirements, and courses, both required and elective.

Method: The study employed qualitative inquiry methods based primarily on textual analysis and the deployment of codes to assign a summative attribute for course types.

Results: The field presently offers 110 certificates, which represents a growth rate of 186% for graduate certificates and a growth rate of 191% for undergraduate certificates.

Conclusion: Certificate curricular data show that, unlike other degree programs, there is still no consensus on what a certificate should be and what courses should be required. Questions are offered to help the field start conversations about certificates.

Keywords: undergraduate degree programs, graduate degree programs, academic certificates, trends in U.S. curricula

Practitioner's Takeaway

- Affords hiring managers a better understanding of what it means to have a certificate in Technical and Professional Communication.
- Provides a better understanding of curricular practices in U.S. certificate programs at both the graduate and undergraduate level, including online programs.

- Offers questions that require the collaboration of practitioners to help answer to update and/or revise curricula.

Introduction

Since the last field-wide curricular survey of academic degree programs and certificates in 1997, the field of technical and professional communication (TPC) has experienced a growth rate of 166% (Meloncon, 2012). During the last 15 years, research studies have looked at undergraduate programs (Allen & Benninghoff, 2004; Harner and Rich 2005; Meloncon & Henschel, 2012; Rainey, Turner, & Dayton, 2005; Whiteside, 2003) and graduate programs (Kim & Tolley, 2004; Meloncon, 2009; Wilson & Ford, 2003). However, an academic

growth area that has received little attention is academic certificates (Nugent, 2010).

One reason that the field may not have produced a comprehensive overview of certificates is that the certificate landscape is a complicated one. As its name implies, the certificate attests to a certain level of achievement or a certain level of knowledge in a particular area. A certificate serves a different function from certification, which implies stringent requirements by a professional organization or nationally recognized entity.

Historically, TPC has had two types of certificates: those awarded by some recognized body for continuing

Overview of Certificate Programs

education or professional development and those awarded by academic institutions. Certificates offered for continuing education by various organizations are usually marketed by focusing on the course. Certificates for continuing education vary in type and duration, usually driven by the recognized body that will "certify" the information. An example of the latter is the STC's "online certificates" for those who complete a short course in a designated topic. The courses are divided into 90-minute sessions and require from 5 to 8 sessions. Participants must "log in for all sessions" to receive credit. The benefit of this continuing education initiative is that it focuses on a specific topic. One could potentially argue that certificates offered by academic institutions provide more breadth, while certificates offered as professional development or continuing education provide more depth within a subject.

Academic certificate programs, on the other hand, are designed to provide certain skills and knowledge without having to complete a full undergraduate or graduate degree curriculum. Undergraduate students can complete a certificate and gain an extra credential upon graduation, and students, who already have a degree, may return to complete a graduate certificate as a way to update skills, earn a promotion, or change careers. The certificate remains an educational program with specific outcomes and objectives. These outcomes are exemplified in the language used to market academic certificate programs. At the graduate level, institutions use language that identifies their target market as "working professionals," "those who are already working," or "students beyond the BA level," and emphasizes the benefits of the certificate such as "brush up on writing and editing skills," "seek professional training…to advance their careers," or the "development of a professional portfolio of work." When describing undergraduate certificate programs, schools highlight specific skills such as "writing and editing skills" or they take the broader approach that a certificate "can easily accompany the completion of most other degrees." This language used to "sell" the certificate is important because institutions market their certificates by touting the "importance of skills and concepts, not specific courses" (Norman & Wells, 1997, p. 149).

Norman and Wells (1997) reported the last field-level review of academic certificates, and it only included information on the number of certificates being offered

and two brief "institutional profiles." A lot has changed in the last 15 years. In what follows, I provide an informational report detailing the number of certificates at the undergraduate and graduate level, the names of the certificates, an overview of field-wide curricula, and information about certificates offered totally online. Also included are admission requirements for graduate certificate programs. Finally, a discussion of the data and questions for the field are posed.

Study Method

The certificate data presented are part of a larger study of U.S. programs in TPC. The study method had four stages: gathering programs and requirements, verifying programs, compiling courses, and coding the courses. A working list of U.S. four-year institutions was compiled by combining the schools listed on the Association of Teachers of Technical Writing Web site, Council of Programs in Technical and Scientific Communication Web site, and the Society of Technical Communication academic database; searching online using phrases such as "degrees in technical writing" (and various combinations of degree types, program names, and order) and scrolling through approximately ten pages of results to catch additional programs; cross-checking information from Integrated Postsecondary Education Data System listing of degrees awarded; following list-serv discussions that pertained to programmatic and curricular questions; and combing through conference proceedings for mentions of new programs and changes to existing programs.

With the final working list of TPC programs, the most recent institutional catalog or bulletin available online (verified in March 2012) was located and saved. This saved copy was used for data analysis. As the official declaration of an institution's programs and curricula, the catalog serves as a quasi-legal contract between the institution and a student. As a public record, the catalog verifies and supports the legitimacy of the academic enterprise: if TPC appears in the catalog, it is a real category. Additionally, catalogs also are a distinct genre with similar characteristics that make finding and comparing data easier (Frank, Wong, Myers, & Ramirez, 2000). As an institutional artifact, the catalog often is archived either electronically or in the institution's

Lisa Meloncon

special collections. Having these long-term records means the data and subsequent findings are based on documents that are not ephemeral (for example, department Web sites or program checklists) and the study's research method is fully replicable (going forward and backward).

From the catalogues, which represent either academic year 2010-2011 or 2011-2012, the most basic information about the degree or certificate such as its exact name, type (for example, bachelors or certificate), and the institutional entity that administers the degree. For degree requirements, the method followed previous scholarship (Harner & Rich, 2005; Meloncon, 2009) and data collected included items such as hours to degree, internship requirements (if any), and cumulative experience requirements (if any). Additionally, data was gathered on online degree programs, since online education continues to be a topic of conversation within TPC, as well as in all of higher education.

With requirements of each program in hand, the author verified that the degree program was a TPC program or certificate and those results were inter-rated by an identified TPC scholar and an outside rater. At the program verification stage, the method is closely aligned to previous curricula work, especially the *Academic Programs in Technical Communication* series (Geonetta, Allen, Curtis, & Staples, 1993; Kelley, Masse, Pearsall, & Sullivan, 1985; Pearsall & Sullivan, 1976; and Pearsall, Sullivan, & McDowell, 1981), and the follow-up to these four texts, Keene's (1997) *Education in Scientific and Technical Communication: Academic Programs that Work.* The primary criterion in all five of these works, as well as our own, is that the institution had to offer a TPC degree in a general sense (Keene, 1997, pp. xi-xiv). This means that the degree program includes a wide range of courses that would be recognized as courses appropriate for a TPC degree, e.g., courses in technical writing, courses that integrate technologies used in the profession, and courses focused on genres (that is, reports, instructions) common in the workplace. In the case of disagreement or when questions were raised, the author and raters worked together until an agreement was reached.

Schools that offer general writings studies programs were excluded. Several institutions offered a certificate that included one or two courses in technical communication with the remainder being journalism and/or creative writing courses. Institutions that offer specialized certificates were also excluded. For example, Southern Polytechnic State University (SPSU) awards a graduate certificate in technical communication. This certificate was included in the data. SPSU also awards certificates in four specialized graduate certificates (visual communication and graphics, content development, instructional design, and communication management). While these types of certificates are clearly *technical communication*, the focus of this study, as with previous curricular research, is on TPC degree programs in the broadest sense. Maintaining the research methodology of previous curricular scholarship does two important things. It provides a way to compare data across time, and it provides the field a much-needed overview of *technical communication* certificates. (With a solid understanding of general certificate programs, future research studies should explore more specialized certificates.)

Institutions for the certificate data were also verified based on the enrollment and/or admission status for students. One factor that distinguishes certificates from continuing education or professional development certificate courses is the necessity for students to be admitted to and enrolled at the institution. For undergraduate certificates, students must be concurrently enrolled as a degree-seeking student. If the institution did not have this requirement, it was excluded. For graduate certificates, students must have a BA/BS degree (or an advanced degree in an unrelated subject) and apply for and gain admission to the graduate school. (See Section below on Admission requirements.) If the institution did not have these two requirements, it was excluded. For example, UC Extension (2008), which is the continuing education arm of the University of California system, "provides innovative learning programs for adult learners." While the courses required for the certificate seemed comparable to other schools, the extension does not require either concurrent enrollment in a degree program for an undergraduate certificate or an existing degree and admission for a graduate certificate.

With a final list of verified institutions (undergraduate n=67; graduate n=43), the next step was to compile all the courses offered. Courses were divided into two main categories: required and elective. Required, as the name implies, includes courses listed

Overview of Certificate Programs

in the catalog as required to complete the degree. The required course listing is comprehensive. The elective category includes courses listed as possible electives or encompasses groups of courses from which students are asked to choose one or two. This part of the study was very messy as there is little to no consistency in how programs address electives. At one end of the spectrum are programs that prescribe all courses to be taken in the major (that is, there are no electives). In the middle are programs that offer relatively few TPC courses and/or provide a comprehensive list of electives, which made data collection comparatively simple. At the far end of the spectrum were large programs with a plethora of electives, which required that the entire list of course offerings from the university catalog be examined. Courses were included and coded if they had not previously identified under required courses. Thus, the elective category is representative of courses across the field, but it is not comprehensive.

In the final step of the study method, the courses were coded. The process of turning course titles into quantifiable data involved coding each course by assigning it a general category. Previous scholarship helped to establish a baseline for general coding categories (Harner & Rich, 2005; Meloncon, 2009). Codes needed to accurately classify the type of courses offered, while limiting the number of codes to generate meaningful data. Course titles and accompanying course descriptions were used to assign a course to a code category. In some instances, to capture as much specific information as possible, it was necessary to use a primary and a secondary code. For example, a course was coded as "genre" to capture the quantifiable importance of learning different genres in TPC, but adding a secondary code enabled more specificity as to the type of genre course being offered. For instance, a course titled "Grants and Proposals" was assigned the primary code of *genre* and the secondary code of *proposals*. The author, another TPC scholar, and an outside rater created the code categories. The author coded the courses for the data presented here and another TPC scholar and an outside rater verified those codes.

Overview of Certificates and Curricula

Basing their numbers on data gathered in 1994, Norman and Wells (1997) reported 23 undergraduate certificates and 15 graduate certificates. Currently, there are 67 undergraduate certificates and 43 graduate certificates. Thus, the growth rate for undergraduate certificates is 191%, and the growth rate for graduate certificates is 186%. This growth rate makes it more imperative for the field to have a better understanding of the curricula of academic certificates. The following sections discuss

- Names of certificates
- Hours needed to complete the certificate
- Information on required and elective courses within curricula
- Online certificate programs
- Admissions information for graduate certificates

Certificate Names

Figure 1 and 2 show what institutions are naming their certificates in relation to the key terms of *technical, professional, writing,* and, *communication.*

Professional writing is the most commonly used name for the undergraduate certificate (33%) and graduate certificates (35%). *Technical writing* and *technical communication*, when combined, account for 25% of undergraduate certificate names, while *technical communication* accounts for 28% of graduate certificate names. Examples of the other words included in the names of certificates are editing, rhetoric, and publishing. Three graduate certificates include *international* in their name. When compared to master and bachelor's degree programs (see Meloncon, 2009; Meloncon & Henschel, 2012), certificates show more agreement on names.

Figure 2 illustrates the percentage of certificates that use *writing* and/or *communication* in their name.

Including *writing* in the name is the most common approach. At the undergraduate level, 73% of the certificates use *writing* in the name, while 49% of graduate certificates do.
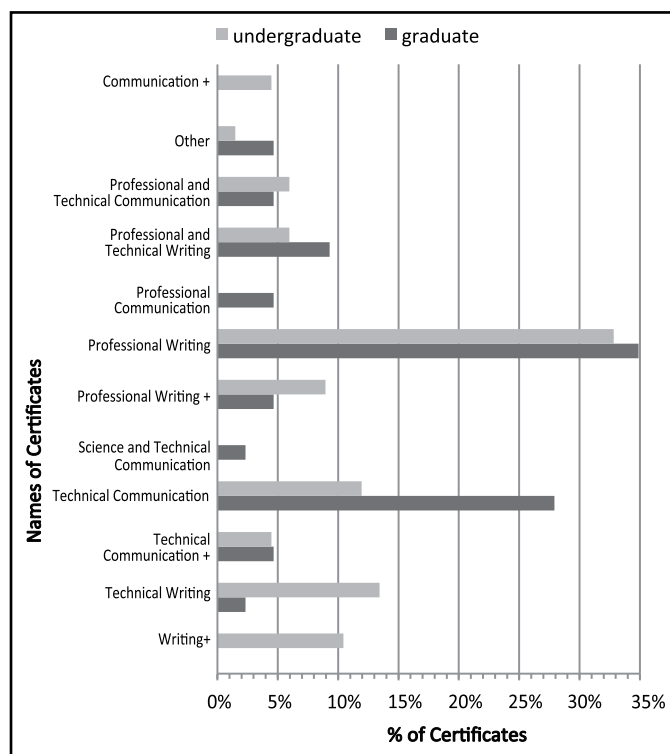
Figure 1. Names of Undergraduate Certificates (n=67) and Graduate Certificates (n=43)

Note: The plus sign (+) indicates the addition of another term in the name of the certificate, e.g. Professional Writing and Editing.
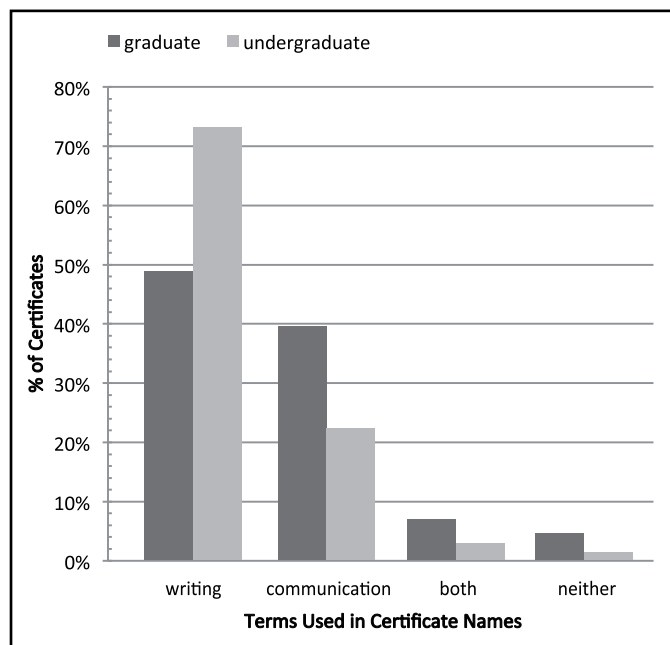
Figure 2. The Use of *Writing* and *Communication* in Undergraduate Certificates Names (n=67) and Graduate Certificates Certificate Names (n=43)

Number of Hours Needed to Complete a Certificate

Figure 3 shows the number of hours needed to complete the certificate. At the undergraduate level, almost three-fourths of the schools require 15 or 18 (which is 5 or 6 courses) hours for completion. While at the graduate level, almost three-fourth of the schools require 12 or 15 (which is 4 or 5 courses) hours for completion. Even though there is more variation in the number of hours for completion at the undergraduate level, the large majority of schools fall within the 12-18 credit hour range. The question then becomes what types of courses are available to students, which is the subject of the next section.
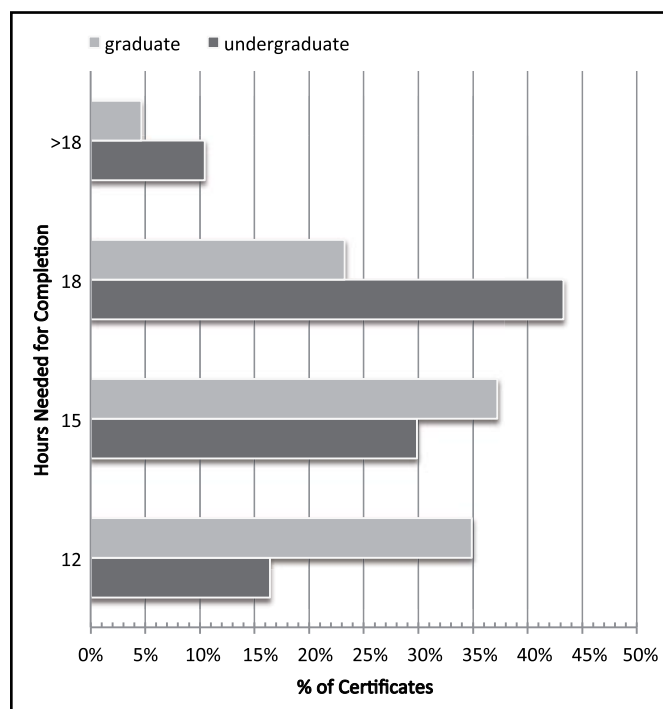
Figure 3. Credit Hours Required for the Graduate Certificates (n=43) and Undergraduate Certificates (Nn=67)

Note: Quarter hours have been converted to semester hours.

Required and Elective Courses in the Curricula

One of the primary research questions that drove this data collection was "what do curricula look like at the field-wide level?" The information in Table 1 shows at a glance the percentage of institutions that require a certain course or offer that course as an elective. For example, if a TPC program administrator was considering revising her certificate curriculum, then she

Overview of Certificate Programs

Table 1. Required and Elective Courses at the Undergraduate and Graduate Level

Generalized course topic	Graduate certificate required N= 118	Graduate certificate elective N= 218	Undergraduate certificate required N=192	Undergraduate certificate elective N=329
Advanced technical writing	12%	7%	13%	16%
Basic	30%	7%	51%	25%
Collaboration	0%	2%	0%	7%
Communication	7%	7%	4%	12%
Composition	5%	5%	3%	3%
Creative writing	0%	7%	0%	24%
Cultural studies	0%	7%	3%	12%
Document/Information design	28%	28%	22%	28%
Editing	28%	33%	37%	21%
Ethics	5%	5%	0%	10%
Genre	19%	63%	24%	51%
Global/intercultural	2%	14%	0%	3%
History	0%	5%	0%	0%
Internship	12%	33%	13%	27%
Intro. technical communication	21%	7%	19%	3%
Independent study	0%	0%	0%	4%
Journalism course	2%	7%	3%	22%
Linguistics	2%	9%	4%	24%
Management	12%	26%	0%	12%
Other	2%	12%	1%	9%
Persuasion	2%	7%	6%	12%
Presentations/oral comm.	2%	7%	1%	7%
Professional development	0%	0%	1%	0%
Publish	0%	5%	1%	3%
Research methods	19%	19%	4%	9%
Rhetoric	14%	23%	10%	25%
Style/prose	0%	5%	9%	12%
Teaching	2%	14%	0%	0%
Technology and tools	7%	14%	10%	24%
Theory	5%	21%	0%	4%
Topics	16%	40%	9%	21%
Usability	5%	7%	0%	7%
Video	0%	0%	0%	3%
Visual rhetoric	7%	21%	10%	7%
Web/multimedia	9%	42%	18%	36%
Writing	0%	2%	4%	4%

Lisa Meloncon

Table 2. Burgeoning Core Courses in Graduate and Undergraduate Certificate Curricula

Generalized course topic	Graduate certificate required	Graduate certificate elective	Undergraduate certificate required	Undergraduate certificate elective
Basic			51%*	25%
Document/Information design	28%	28%	22%	28%
Editing	28%	33%	37%	21%
Genre	19%	63%	24%	51%
Web/multimedia	9%	42%	18%	36%

* core course

could know that 28% of graduate certificates require an editing course. (Because the number of courses varies, the percentages do not add up to 100%.)

Since the number of hours and subsequent number of courses are so limited, most institutions craft their curricula to limit students to a narrow range of courses. Since many schools dictate the courses students can take, I wanted to determine if there were any commonly required courses or "core courses" (Meloncon, 2009). Unlike master's degrees and undergraduate degrees, the only course that could be concerned a "core course" is the *basic* course at the undergraduate level. Otherwise, there does not appear to be a consensus on what "core courses" should be included in a certificate's curriculum. However, there are courses that appear with greater frequency at both the graduate and undergraduate level. See Table 2.

The five courses in Table 2 can be considered burgeoning core courses because they are the most frequently occurring and are found at over 50% of the schools as either a required or elective course. This frequency indicates institutions do share some fundamental understanding that these courses can prepare students to successfully enter the job market. A brief overview of what the general course category means is warranted.

- **Basic:** this is the introductory course in technical communication that provides an introduction to key concepts of purpose and audience and also provides practice in the production of various types of documents commonly associated with technical communication.
- **Document/information design:** this course focuses on the practical production of designing documents

(or online materials) in a visually appealing and usable way. It appears to offer a combination of theory and practice. Theory in this sense means focusing on how to design documents to help the end-user access and use the information; practice means using a variety of tools to produce professionally designed documents. Several of the course descriptions I spot-checked used the name information design to mean the same thing as document design.

- **Editing:** As this category title implies, this is an editing course, and course descriptions indicate the editing process starts at large order concerns such as organization and moves toward lower order concerns such as grammar and usually focuses on large-scale issues all the way through sentence level issues.
- **Genre:** Courses coded in this category include all courses that focus on one of the three major generic categories—instructions, proposals (including grants), and reports, as well as specialized genres such as promotional writing or science writing.
- **Web/multimedia:** This category is a catchall for courses that contain one of these words in the title of the course. The emphasis in these courses seems to be on the front-end design and usability of Web sites as well as writing for online audiences.

Online Certificates

It will come as no surprise that there are an increasing number of certificate programs offered totally online. Table 3 includes schools that offer complete online certificates.

Overview of Certificate Programs

Table 3. Institutions that Offer Online Graduate and Undergraduate Certificates

Graduate certificate institutions	Undergraduate certificate institutions
Arcadia University	Black Hills State University
Bowling Green State University	Cal State Dominquez Hills
East Carolina University	Metropolitan State University Denver
Louisiana Tech University	Minnesota State University, Mankato
Minnesota State University, Mankato	Purdue University Calumet
Murray State University	Rensselaer Polytechnic Institute
New Jersey Institute of Technology	Southern Polytechnic State University
Northern Arizona University	University of Maryland University college
Southern Polytechnic State University	University of Massachusetts Lowell
University of Central Florida	Washington State University Pullman
University of Texas El Paso	West Texas A&M University
University of Wisconsin-Milwaukee	

Of the 12 graduate institutions, 9 offer a face-to-face degree programs of some type, and of the 11 undergraduate institutions, 8 offer face-to-face degree programs of some type. For six institutions, the online certificate is the only TPC degree program offered. The institutions that offer some other type of TPC program face-to-face use the same courses for multiple programs. Said another way, the online certificate programs were not developed as distinctly different from face-to-face degree programs.

Admission to Graduate Certificate Programs

Practitioners (with an existing undergraduate degree) may find graduate certificate programs appealing for any number of reasons such as updating their skill set, a refresher of their skill set, certification to gain a promotion or raise, or certification to change jobs, to name but a few. However, practitioners may also hesitate to explore this option because they think admission requirements too cumbersome. Unlike admission to graduate programs (see Eaton, 2009), applying to certificate programs requires less paperwork, and in many cases, no standardized test like the Graduate Record Examination (GRE) or even a writing sample. (In addition, most schools are flexible with admission requirements for certificates so be sure to contact the certificate coordinator to get the most accurate information.)

While the admission requirements may not be as involved as master's degrees, students are required to apply and be admitted to the institution to pursue a graduate certificate. All institutions do, however, require a completed application for admission and usually, an application fee (as listed). Table 4 lists admission requirements for schools offering a graduate certificate.

If students wish to continue with their graduate studies and complete a Master's degree at the same institution, the majority of institutions will apply all courses taken for the graduate certificate toward a Master's degree. However, once that decision has been made, students must then complete the admission requirements for the master's degree, which are different from what is described in Table 4. (See Eaton [2009] for more information on admission requirements for Master's and PhD degree programs.)

Discussion and Questions for the Field

In what follows, I discuss the data and offer questions for the field—academics and practitioners alike—to consider. The questions posed below are not meant to be comprehensive nor are they meant to indicate that these are the most pressing questions. Rather, the questions are meant to instigate field-wide conversations about curricular concerns.

Lisa Meloncon

Table 4. Admission Requirements for Graduate Certificate Programs

University	Application fee	Personal statement	GRE	Writing sample	# Recommendations
Arcadia University	$20	Y	N	N	2
Arizona State University	$70	N	N	Y	3
Auburn University	$50	Y	N	Y	3
Boise State University	$55	Y	N	N	3
Bowling Green State University	$30	N	Y	N	3
East Carolina University	$60	Y	N	N	3
Eastern Michigan University	$30	Y	N	Y	2
George Mason University	$60	N	N	Y	3
Illinois Institute of Technology	$40	Y	N	N	2
Kansas State University	$40	Y	Y	Y	3
Kennesaw State University	$60	Y	Y	Y	N
Lawrence Technological University	$50	N	N	N	N
Louisiana Tech University	$40	N	N	N	N
Madonna University	$25	N	N	N	N
Milwaukee School of Engineering	$0	N	Y	N	2
Minnesota State University, Mankato	$40	Y	N	N	N
Missouri University of Science and Technology	$50	Y	Y	N	3
Murray State University	$30	N	N	N	N
New Jersey Institute of Technology	$60	Y	N	Y	1
Northern Arizona University	$50	Y	N	Y	N
Northern Illinois University	$40	N	Y	N	2
Northern Kentucky University	$50	N	N	N	N
Old Dominion University	$50	Y	Y	Y	2
San Diego State University	$55	N	N	Y	3
Southern Polytechnic State University	$20	N	N	N	N
Stevens Institute of Technology	$60	N	N	N	2
University of Alabama, Huntsville	$40	Y	Y	N	N
University of Central Florida	$32	Y	Y	Y	2
University of Cincinnati	$45	Y	N	Y	3
University of Massachusetts, Dartmouth	$60	Y	N	Y	3
University of Minnesota	$75	Y	Y	Y	N
University of Nebraska, Omaha	$45	Y	N	Y	N
University of North Carolina, Charlotte	$55	Y	Y	N	3
University of Texas, El Paso	$45	Y	N	Y	N
University of Washington, Seattle	$50	Y	N	N	N
University of Wisconsin, Milwaukee	$56	Y	N	Y	2
Western Carolina University	$45	N	N	Y	N
Western Illinois University	$30	Y	Y	Y	3
Westminster College	$50	Y	N	Y	2
Wright State University	$25	N	Y	N	N
Youngstown State University	$30	Y	N	N	N

Overview of Certificate Programs

Certificate Names

In academic circles, discussion of names of certificates, as well as degree programs, dates back to the first days of Council of Programs in Technical and Scientific Communication (Pearsall, 1974). Those discussions continued intermittently in the literature and in conference conversations until Johnson (2007) approached the issue directly. He discussed the issue of naming from a theoretical and philosophical perspective, and in doing so, he highlighted a quite practical concern about naming, that is, "naming has political consequences" (Johnson, 2007). The politics of naming is evident on the professional side of the field as evidenced in the STC's work to compel the Bureau of Labor Statistics to update the entry in the *US Occupational Outlook Handbook* (Martin & O'Sullivan, 2007). In both cases, naming concerns revolve around key terms—*technical, professional, writing,* and, *communication.* Based on the data (Figures 1 & 2), the following questions arise:

- What is the driving force behind the academic propensity to name certificates *professional* more so than *technical*?
- What are or will be the ramifications of this naming practice for the field in the future?
- How do potential employers perceive a *professional writing* certificate as it compares to perceptions of a *technical writing/communication* certificate?
- What are additional "political consequences" of certificate names within the academy and outside of it?

Number of Hours Needed for Completion

Figure 3 shows the number of hours needed for certificate completion. Undergraduate certificates, on average, require 1-2 more courses than graduate certificates. This seems to indicate that academic planners believe undergraduates need additional coverage in topics related to technical communication. Or it could be based on institutional guidelines that require undergraduate certificates to include a minimum number or hours. The existing curricular literature lacks a discussion of hours' requirements. But, but even if institutions have little control over the number of hours required to receive a

certificate program, the field should be asking questions about hours and certificate programs such as

- How do hours' requirements dictate the choice of courses required in a program?
- What is the rationale for so few courses (most common is four) at the graduate level?
- Conversely, what is the rationale for common hours at the undergraduate level?
- Do people who hire students with certificates have a sense of what a certificate means in regards to the number or hours and/or do they even ask questions regarding the number of hours completed?

Required and Elective Courses

At the undergraduate level, one core course has been identified: the *basic* course. As an introduction to the practice of technical communication, it should not be surprising that this course is a core course of the undergraduate certificate curriculum. Since the undergraduate certificate is generally marketed as a complement to other degree programs, providing a basic overview is a good way to ground the curriculum. However,

- Why does this course, or one like it, not appear in the graduate curriculum, especially when many certificates are marketed as a way to change careers?
- What is the content of these courses and how closely does it align to practice?

With the increasing emphasis on the visual and the growing amount of data generated across fields and industries, the appearance of courses on *document and information design* are a good sign. However, based on the course descriptions, there is much ambiguity about what is actually taught in these courses. Questions for the field include:

- What is being taught in these courses? And does the content match the visual and data demands of the 21st century technical communicator?
- Should curricula include a greater emphasis on the trends in "big data"? (Lohr, 2012)

Lisa Meloncon

The large emphasis on genre courses (combined required and elective for graduate certificates 82%; combined required and elective for undergraduate certificates, 75%) seems to indicate that certificate curricula understand that students need to understand the wide variety and kinds of documents they will be asked to write. Undergraduate curriculums show a greater number of required courses in primary genres while at both levels schools show an emphasis of having a wide range of courses focused on more specialized genres. The most common genre courses in the graduate curricula are courses on instructions (51%) and proposals (37%). At the undergraduate level, the most common genre courses are instructions (28%), proposals (19%), and reports (18%). In 2005, Rainey, Turner, and Dayton received 67 survey responses from technical communication managers. These managers provided a list of information products produced to include pdf documentation, manuals, and online help, (326), which bodes well since many schools have courses focused on these types of documents. While it seems industry focus and academic focus align on the topic of instructions, the larger question remains

- Is the emphasis on genres a good curricular and practical move?
- What approaches are being used to teach these genres?
- What other genres need to be included in the curricula more prominently?

Only 9% of graduate certificates that require a course focused on the web, but 42% offer it as elective. At the undergraduate level, a web course is required at 18% of programs and as an elective in 36%. Currently, the web is such an integral part of the work of technical communication that these numbers, especially the low number of required courses, raises questions about the role of web development courses. Questions for the field include

- What should the role of web courses be?
- Should writers and communicators be required to know how to build Web sites? Or should writers simply know how to write for one?
- What other web related topics should be included in the curricula?

Other Courses of Note. Other courses outside of those that appear most frequently that merit discussion are *internships, topics,* and *rhetoric*. Internships are required in 12% of graduate certificates and are offered as an elective in 33%. At the undergraduate level, they are required in 13% of undergraduate certificates and are offered as an elective in 27%. TPC has a long history of including internships as requirements or highly recommended electives in academic programs (see Munger, 2006; Savage & Seible, 2010; Sides & Mrvica, 2007). However, as Bloch's (2011) analysis of internship reports show, the internship also requires substantial work on the side of the faculty, the student, and the sponsoring organizations. Thus, are internships a good curricular fit for certificate programs?

Topics courses are those courses in which the topic changes each time the course is taught. From an academic standpoint, topics courses can be used to pilot a new course or they are used to offer coverage in current or innovative areas within the field. Graduate (16% required/40% elective) and undergraduate (13% required/27% elective) certificates have a fairly large presence of topics in the curricula. While we know these courses are offered, what we do not know is what the "topics" are of these courses. For example, are their common topics in topics courses? Are topics courses how curricula are staying current in the field or are they serving another purpose? Why is it that so many institutions have these courses listed in certificates when, as previously discussed, certificates seem to be more narrowly defined curricularly?

Rhetoric courses are courses that generally have rhetoric in the title. Sample course titles include, "Foundations of Rhetoric" (undergraduate); "History of Modern Rhetoric" (undergraduate); "Rhetorical Criticism" (graduate); and "Rhetorical Theory" (graduate). While these courses are not as common as the burgeoning core courses in Table 2, they are common enough, combined required and elective at 37% of graduate institutions and 35% of undergraduate institutions, to ask the questions: what is the place of theory in certificate curricula? Is rhetoric the best theory for certificate curricula?

Following are two sample curricula that are representative of graduate certificates. Both require 15 credit hours, which was the most common number of hours, and one is in Technical Communication and

Overview of Certificate Programs

one is in Professional Writing, which were the two most commonly used names. See Table 5.

Following are three sample curricula that are representative of undergraduate certificates. Two are in Professional Writing, which is by far the most commonly used name (33% of all certificates) and one requires 18 hours and one requires 15 hours, which were the two most common number of hours. The other is in Technical Communication (12% of all certificates) and requires 18 hours. See Table 6.

The curricula of the two undergraduate certificates in professional writing, Example 1 and Example 2 are more structured. Example 1 requires 5 out of 6 courses needed for completion, which means students can only select one elective. In Example 2, students have options and are required to take the prescribed list of courses. Example 3 offers the most flexibility with only 6 of 18 hours prescribed as required. However, while these examples are representative of *professional writing* and *technical communication* certificate curricula, there is no statistical significance between the kinds of courses offered and the name of the certificate.

With a snapshot of several certificates' curricula and the already discussed questions about the lack of consistency in curricula, it is also important to consider an alternate scenario. In discussing the two institutional programs they profile in their chapter on certificate

programs, Norman and Wells (1997) pointed out "both [programs] were very carefully planned to fit the department and the local market" (p. 148). While the data presented here is meant to provide a field-wide overview, the data by themselves cannot express the specifics of the "local market" or the possibilities of other institutional pressures on curricula. Thus,

- What information about local markets and concerns should researchers gather?
- Then, how can that localized information be put to use for field-wide concerns?

Still considering certificate curricula as a whole, the field needs to be self-reflective, especially considering the idea that "employers complain that there is no consistency among graduates and very little assurance that a graduate has a minimum set of capabilities" (Davis, 2002, p. 143). So some questions for the field include:

- What should minimally be taught in a certificate program at the graduate and undergraduate level?
- What are the expectations from those who will be hiring certificate graduates and how do those expectations match what is being taught?

Table 5. Sample Curricula for Graduate Certificates

	Technical Communication	Professional Writing
Required	**Technical rhetoric and applications**	**Research methods**
	Technical editing	internship
	Technical communication ethics	
Electives	**Select Two**	**Select Three**
	Introductory seminar in technical communication	Grant writing
	Visual rhetoric in print document production	Issues in professional writing
	Oral communication for technical communicators	Fieldwork in community literacy
	Writing for the computer industry	History of rhetoric
	Technical publications management	Histories of writing technology
	Instructional design	
	Topics in on-screen document production	

- What differences exist in the levels of instruction at the graduate and undergraduate levels? (Keene, 1997).
- Should the field be concerned that there are not "core courses" in certificate programs?
- Do certificate programs help to prepare certificate for certification?

Online Certificate Programs

According to the Sloan Consortium's annual report on the state of online learning in the U.S., 6.1 million students took an online course in fall 2010, which is a 10% increase from the previous year (Allen and Seaman, 2011). Since the inception of Sloane's annual report seven years ago, the numbers of online courses has risen steadily. Thus, the number of online certificate programs in technical communication should come as no surprise. At the graduate level, 28% of certificates are offered wholly online, while 16% of undergraduate certificates can be completed online. In their marketing and information materials, several institutions highlight that some courses can be completed online. This option provides another level of flexibility in completing the certificate, and also indicates the institution's potential and interest for moving toward a complete online curriculum.

Up to this point, the field has had no comprehensive data about online programs so it is impossible to determine trends or growth rates in online programs. Since certificates are the most common academic program offered online, the present study will provide a starting point to track the growth and to monitor trends these programs. Questions for the field include

- How many online certificates can the field sustain?
- What are best practices for teaching TPC in online settings?
- How can we address ongoing issues of quality and rigor from various stakeholders?
- What professional development opportunities exist for faculty being asked to teach online? What roles should professional and academic organizations play in helping to train online instructors?

Table 6. Sample Curricula for Undergraduate Certificates

	Example 1 Professional Writing 18 hours	Example 2 Professional Writing 15 hours	Example 3 Technical Communication 15 hours
Required	**Scientific and technical writing**	**Professional writing**	**Principles of multimedia writing**
	Technical writing	Document design	Principles of technical communication
	Advanced composition	Study of language	
	Technical editing	Study of rhetoric	
	Rhetoric of style	Journalism production	
Electives	**Select One**	**Not applicable**	**Select Four**
	History of modern rhetoric		Principles of visual communication
	Organizational communication		Principles of technical editing
	Independent study		Manuals and instructions
	Introduction to linguistics		Computer documentation
			Business reports

Overview of Certificate Programs

- What are summative and formative assessment techniques that we can use to assess online programs?

Sustainability and Professionalization

Upon consideration of the field-wide growth rate of certificates, we may need to consider the issue of sustainability raised by Johnson (2004) because it ties directly to one of the most pressing questions that came out the data collection: Can such rapid program expansion be sustained, and if so, how can we develop best practices or state of the art techniques for TPC program administration? Sustainability, in a general sense, is the capacity to maintain a certain process or a state indefinitely, and it is a term closely identified with ecology and sustaining current inhabitants within their environments. Sustainability efforts are intimately tied to the future. Johnson questioned whether rapid growth is good for the field and whether this growth could be sustained. He writes, "the perseverance to sustain our programs, and to anchor our power and status in and out of the academy, will require deep and sometimes painful assessment of who we are and where we want to go" (p. 113).

A potential "painful assessment" not previously addressed but directly connected to issues of sustainability is the limited number of course offerings and availability of qualified faculty. Many institutions have started certificate programs because of demand and/or the potential to generate revenue, that, for example, require four courses with only six courses in technical communication available. What this means for students is that they are limited in the types and kinds of courses they can take. From a program sustainability standpoint, this can be viewed as a positive for sustainability because it means the department is not over extended. However, on the other hand, it may indicate that department has limited resources, including teaching capacity, and cannot handle more course offerings. It also suggests that academic certificate programs may be unable to adequately adjust course offerings to changes in the professional landscape, which means certificates lose one of their biggest marketing promises, to offer current skills and knowledge necessary for the workplace.

Part of Johnson's' question about what the field wants to be intersects with ongoing issues of professionalization. For example, Coppola's introductions to two special issues of this journal (2011, 2012) stress the "growing collective consciousness, but certainly not collective agreement, for professionalization" (2011, p. 283) of the field. In both special issues, considerations of the current state of the field as a profession took center stage. However, the place of academic programs, including certificate programs, was conspicuously absent. Of all the academic degree programs, the certificate can be "precisely the point at which industry and academic goals and interests have the opportunity to meet" (as cited in Little, 1997, p. 281), and in meeting and through discussion, it provides a location to develop a greater sense of the profession and the value-added technical communicators can bring to an organization. This collaborative approach could enact what Kline and Barker (2012) called a "professional consciousness." Kline and Barker argued that collaboration (based on Wenger's community of practice) could "encourage professional consciousness that leads to increased professional status" (p. 32). What better location to establish a joint enterprise than under the auspices of training the next generation of technical communicators? And embedded within this opportunity is a chance to explore answers to the question, "Given the conflicting demands of academe and the world of practitioners, how can program planners best create quality programs?" (Keene, 1997, p. 193). To which I would amend, how can program planners create, adapt, and sustain quality programs that meet the diverse needs of stakeholders?

Conclusion

Similar to the findings of Norman and Wells (1997), academic certificates still fulfill the same three goals: to enhance a degree, to train people making a career change or to provide professional development opportunities for working professionals (p. 126). Certificates are an important touchstone in the field because more so than other academic programs they sit at the intersection between academia and industry providing an interesting mix of training and education, a bridge between theory and practice. Thus, having

Lisa Meloncon

current, comprehensive field-wide data about academic certificate programs affords an important opportunity for those who direct and teach in academic programs, for local practitioners and for hiring managers and other stakeholders to discuss the curricula and expectations and sustainability of such programs in times of limited resources. In addition, it provides an opportunity to discuss the current and future roles of certificates within the field. While the "questions for the field" asked above have no easy answers, entering into conversations that explore potential answers can only enrich and forward technical communication as a vibrant, diverse, and vital professional and academic field.

Acknowledgments

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Modality Approach to Successful Grant Writing

Karina Stokes

Abstract

Purpose: Successful grant writers: assess what a proposed project has to offer, understand what a grant-making agency wants, and communicate a clear match between the two. The issue is how to develop an understanding of what grant-making agencies want and effectively communicate with target audiences.

Method: Applying modality analysis, based on pedagogical theories focused on learning styles, to publications from a funding source involves identifying words that are associated with visual, auditory, or kinesthetic orientations. Matching the identified communication style/modality of the funding source can enhance communication and funding success.

Results: Experience with grant proposals that use rhetorical approaches that are based on modality analysis of agency publications can attain more success than other submissions.

Conclusion: A grant writer can base his/her selection of rhetorical approaches on modality analysis, which seems to be a viable way to make one's grant proposal text connect with the values, priorities, and communication preferences of a funding source, and this connection enhances chances for success.

Keywords: grant writing, rhetoric, modalities, learning styles

Practitioner's Takeaway

- The best standard advice on grant proposal content is effective: provide clear information on needs, goals, objectives, and evaluation plans.
- Storytelling, as opposed to a dry presentation of facts, increases interest among readers and can be used to catch the attention of grant reviewers.
- Assessing modality preferences of funding sources can help select appropriate rhetorical approaches that will resonate with decision-making readers and enhance persuasive impact and acceptance.
- Appropriate communication styles, selected via modality analysis, might increase the likelihood that proposal reviewers will identify with, come to trust, and thus be persuaded by grant writers.

Combine Modality-Based Rhetoric with Grant Writing Essentials for Potentially More Effective Results

Good grant writing involves a well-planned message and an appropriate communication strategy that delivers the message persuasively to a target audience.

Recent advances in pedagogy focus on understanding learning styles (modalities) in order to effectively deliver educational lessons tailored to learners. These ideas from pedagogy can be applied to grant writing in order to tailor messages that will effectively and persuasively resonate with funding sources. An understanding of learning modalities can inform a grant writer's rhetorical approach for showing how a project team shares values

Modality Approach to Grant Writing

with a funding source; this is especially important in the case of small grant-making foundations where funding decisions are made by personally-involved, dedicated individuals. While these ideas may be less applicable to government agency grants, the analysis process only takes a few minutes and might still assist grant writers in choosing rhetorical approaches and specific wording to apply in the process of writing an effective grant proposal.

Educators typically use instruments designed to diagnose learning styles, preferences, or modalities, and then make an effort to match lessons to the strengths of the students. "Learning styles are a characteristic and preferred way of learning" and they can be thought of as "the conditions under which an individual finds it easiest and most pleasant to learn" (Waubonsee Community College, 2004). To further clarify

A comprehensive definition of learning style was adopted by a national task force, comprised of leading theorists in the field and sponsored by the National Association of Secondary School Principals. This group defined "learning styles" as the composite of characteristic cognitive, affective, and physiological factors that serve as relatively stable indicators of how a learner perceives, interacts with, and responds to the learning environment (Keefe, 1979). Included in this comprehensive definition are "cognitive styles," which are intrinsic information-processing patterns that represent a person's typical mode of perceiving, thinking, remembering, and problem-solving. (Griggs, 1991)

There are many versions of learning modality theory; however, the ones most prominent in the public mind are those that divide learners into three categories. "*Visual learners* prefer to learn by reading or watching. *Auditory learners* like to learn by listening. *Kinesthetic learners* learn by doing, by touching or manipulating objects, or by using their hands" (Waubonsee Community College, 2004). While much debate among educators continues over these three categories and theories that employ other divisions, for the purposes of understanding grant rhetoric, these three modalities are sufficient based on professional experience with successful grant writing.

While many how-to guides cover the steps involved in planning and explaining a project which needs funding, most do not thoroughly examine the options available for audience analysis that will enable the writing of truly reader-centered proposals. Henson (2004), a grant-writing workshop leader, tries to get grant writers to put themselves "in the role of grant proposal evaluators. What would impress you most if you were responsible for selecting one grant over another?" (p.11). Most people responsible for selecting a grantee make choices based on what seems "best" to them given the needs, values, and mandates of the agency they represent. How to put oneself in the proposal evaluator's position is not clearly spelled-out by most grant writing specialists, but a modality analysis of the RFP and other agency documents can be a useful way to provide a grant writer with enough insight into the communication preferences and values of the decision makers to adopt a rhetorical approach that can facilitate success.

Generally, grant-writing experts focus on the need to follow RFP (Request for Proposals) directions and to logically persuade the funding agency that this proposal is better than the rest. "Success comes from learning how to produce an excellent proposal, targeted to a specific RFP, and from taking the time required to make a proposal that is better than the other submitted proposals" (Henson, 2004, p.18). In my experience, this advice is partly correct; however, instead of targeting only a RFP, more successful grant writers will target the writers of the RFP who are likely to be among the readers of one's proposal (especially in the case of small foundations directed by a committed staff). Conducting an analysis of the audience via the RFP and other materials from the funding source in order to understand the motives, values, attitudes, and communication preferences of the grant-making agency personnel can reveal the style of writing needed to enable a writer to connect with the people who are at the center of a funding source.

Many small agency and foundation grants, as well as government grants, are fruitfully realized via the creation of trust and rapport rather than by winning a competition based on facts alone. My own experience with writing a proposal for a client seeking a 1997 US Department of Education grant provided me with ample evidence that using rhetoric that is designed to make

the audience feel comfortable with the grant seeker is a worthwhile strategy. Many non-profit foundations actually state that they promote projects which address their published values and goals. I became increasingly aware of the need for connecting with the audience of a proposal during my work with a Samaritan Center that was seeking funding from the Hogg Foundation in 1999. Analyzing and emulating the communication preferences of a grant proposal audience is as much a key factor in success as is presenting a clear message that answers all the questions of the funding source; of course, the style will not have the desired impact if the content is completely void of substance, so a review of the essential content is prudent.

Step 1: Be Clear on the Grant Proposal Message

In any grant-writing endeavor, the first task is to fully develop the message; then, audience analysis can aid in choosing writing styles that present the message convincingly. Every good proposal must have a purpose; a proposed project aims to fill a real need or solve a real problem by making a change in a methodical way and documenting that the result of the change met the need. Clearly explaining this message is the first challenge that a grant writer faces, and this is one of the essential skills of grant writers.

Distinguish Needs from Solutions that Meet the Needs

Often, grant writers make the mistake of confusing the "need" with what they want to have. One of the major tasks of writing a grant proposal involves describing a problem that needs to be solved or goal that needs to be achieved and then explaining the steps (objectives) that will be taken to attain the goal. In writing a *needs statement*, it is imperative to be specific in showing the difference between what the beneficiaries of the project currently have and what they need. To do this, grant writers must clearly separate the need from the solution in their own minds. For example, school social workers might need a van to transport children to and from after-school tutoring activities. It is obvious to the school social workers how helpful the van will be. By focusing on the van, however, they are focusing on one part of

a solution and not on the needs that the van will meet. The message would be clearer if they document the learning needs of the students who will be transported in the van and how the van will help improve learning (Chavkin, 1997). Grant writers should be clear about needs and solutions.

Most grant-writing experts recommend logical, factual descriptions of needs, including a brief review of what relevant experts have said, to verify the existence of the need(s) and either to document an ongoing history of a problem or to show how a recent change in some circumstance is the cause of the problem. "By simply reviewing the literature and reporting the research conducted by others, grant-proposal writers can build convincing support for their grants" (Henson, 2004, p.68). Some experts believe that proposals need to include pilot study data and/or explanations of logical decision-making processes that were used to determine that the need really exists or that a specific solution is feasible (Friedenberg *et al.*, 1995, p.64). A viable proposal, then, demonstrates a need for specific knowledge in a discipline or for changes in physical circumstances among a specific population or within a specified physical location. To avoid confusing the need with the solution which will meet the need, it is a good practice to brainstorm all aspects of the problem and the solution in order to ensure that the message is clear to the writer before he/she attempts to explain it to a funding source. Explaining the need, and the reasons why it must be met, is the first step in explaining the central message in a grant proposal.

A statement of need must consider two aspects of the problem to be solved. The first is a matter of how serious the problem is (how desperately it needs to be solved). The seriousness of a problem can be established by looking at the consequences (effects) of the problem. To mentally explore a problem, one might begin with a logical mind map (sometimes called a cluster map) as shown in Figure 1. The effects are typically the perceived problems, but the cause is the real underlying problem that produces the effects (Johnson-Sheehan, 2002). Showing the connections between the real problem and its deleterious consequences can help to prove that a problem deserves to be solved.

Modality Approach to Grant Writing
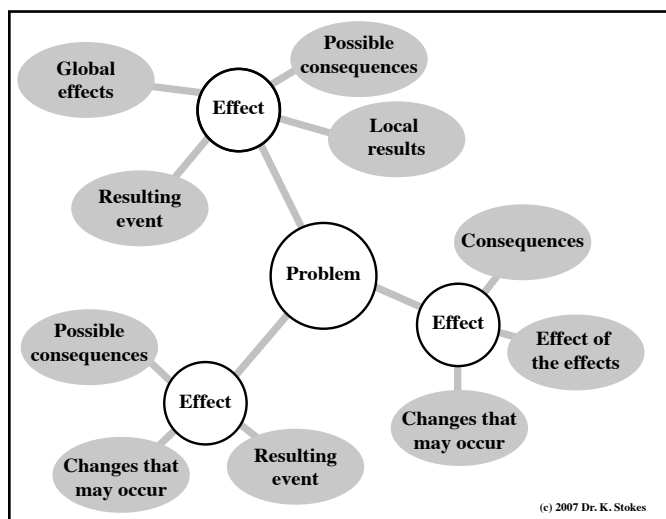
Figure 1. Logical Mind Mapping Exercise Shows the Existence (and Severity) of a Problem

Figure 2. Logical Mind Mapping Exercise Determines the Real Problem and Finds its Causes

The second requirement for creating a statement of need involves a grant writer demonstrating that he/she understands the cause(s) of the problem. Figure 2 shows a logical mind map for exploring causes. Causes can be determined by asking "why" and "what" over and over until one arrives at a starting point. One should keep asking these questions (Why is this happening? What changed to bring about the undesirable effects?) until the ultimate cause that is to blame for the problem is uncovered (Johnson-Sheehan, 2002). A viable solution must target whatever caused the current need. The solution is the basis for the objectives in a proposal, and the goal of the proposed project is to change the effects by altering the causes. Differentiating causes from effects of a problem allows one to articulate a valid goal that will make an appropriate change.

Explain Goals Clearly as Making a Specific Change

Once the effects have been examined in order to demonstrate the severity of the problem, and the causes have been accurately identified, then the next task is to show how the proposed project will solve the problem in a reliable way. The purpose of a goal statement is to hypothesize about *how much* of *what kind* of *change* will occur in a *target area/population* within a *specified time* for a set amount of *money*. A need is typically a problem to be solved, the goal is the outcome desired (solution), and the objectives are the activities that will bring about

the desired outcome or solve the problem. The purpose of objectives statements is to specify how the change will be made to happen (that is, what concrete actions will be taken). Objectives are typically not as difficult as needs statements or evaluation plans.

Once the grant writer has defined the goal and explained the methods of a project, the project goal must be matched with the goals that a funding source is willing to fund and submitted only to agencies concerned with the kind of problems and solutions that the proposed project is pursuing. The "shotgun" method of submitting grant proposals typically "results in high rates of rejection and negative positioning with funding sources" (Henson, 2004, p.4). Sending proposals to numerous foundations and government agencies that seem to have interests only marginally related to the goals of a proposed project not only garners rejection of the proposal, it also reduces the credibility of the project team, their organization, and the grant writer. If an organization's rejection rate rises to more than 50%, then the name of that organization on a proposal will begin to elicit immediate negative responses from reviewers at grant-making agencies (Bauer, 1999). Showing that good research goes into the selection of potential funding sources, as well as the development of the project, enhances credibility. Finally, every funding source will want some kind of assurance that its money is well-spent and that the proposed goal is achieved; a

Karina Stokes

valid evaluation plan for demonstrating the achievement of success provides accountability concerning the agency's return on investment.

Make Evaluation a Part of the Plan

Typically, funding sources require evaluation methods (measures of success) to be explicitly described in a grant proposal. The purpose of outcomes assessments or project evaluations "is to reassure the clients that your work met the goals listed in the proposal" (Johnson-Sheehan, 2002, p.81). Grant-making agencies want to know that the project team actually completed the work for which they received funding and accomplished the goal that their proposal promised to deliver. It is not enough to state that the problem will be eliminated or that the unacceptable effects of the problem will be reduced. The question is: how will the degree of success be measured? Grant-making agencies expect grant writers to define success as attaining some degree of achievement with respect to the planned goal. A Technology Innovation Challenge Grant Program RFP expresses the need for an evaluation plan as follows:

> But Challenge Grant successes and lessons must be well documented. A carefully developed evaluation plan should be part of each application. It is not enough to promise that an evaluation will be done at some point in the future. A specific section of the application should explicitly describe the evaluation design that will be in place when the grant begins. The plan should establish clear benchmarks to monitor progress toward specific goals, and it should be explicit about how improvements in learning and instruction will be assessed. Developing evidence of effectiveness should not be put off until the last stages of the effort. In a Technology Innovation Challenge Grant, a strong evaluation plan must be a consideration from the design stage onward and information generated by the evaluation should provide continuous feedback for improvement to the project and to wider education community. (U. S. Department of Education, 1997, p.6)

Fortunately, it is not difficult to develop an evaluation plan based on a specific goal. All the grant writer has to do is specify how the information about circumstances "before" and "after" the project is

implemented will be collected and compared as well as how much of a difference will be counted as success. If that specified difference is attained, then success is achieved.

In addition to an overall evaluation, intermediate success should also be measured throughout the project implementation, and the plan for doing so should be outlined in the proposal as well. Project evaluation should not fall into the "autopsy" category. Many project coordinators wait until a project is completed before they consider doing an evaluation, when it is often too late to change some of the activities/methods that could have improved the project. Staff should consider combining a process (formative) evaluation with an outcome (summative) evaluation (Chavkin, 1997). Planning for and completing periodic formative evaluations will allow a project manager to stay on track, and having a plan for such periodic evaluations detailed in a proposal will reassure a funding source that the proposed project will be conducted effectively and competently.

After costs, the things that grant-making agencies most want to know are: what need will be filled (what problem will be solved), how will the goal be achieved (who will do what specific activities to bring about the solution), and how will success be measured (who will measure what, when will measurements be taken, and how will comparisons be made)? Content is key, but failure to communicate a good plan can still result in a lack of funding. Effectively communicating a project's needs, goal(s), objectives, and evaluation strategies to a funding source requires making the right rhetorical and stylistic choices for the audience.

Step 2: Develop a Good Story to Present the Facts

Once the content (needs, goals, objectives, and evaluation plans) has been fully developed and matched with a grant-making agency's values, the next step is to determine how to express the ideas that have been developed. Grant-writing experts recommend numerous strategies from perspicuity to storytelling. Being clear and brief certainly shows respect for the time of the readers. Keeping busy agency personnel interested in reading a proposal to the end is also important. One of

Modality Approach to Grant Writing

the greatest concerns is for connecting with the audience because people naturally trust, and thus prefer to give money to, people who seem just like them in terms of values and preferences (that is, people with whom they can identify). Making a connection and maintaining interest begins with respecting the reader's time and effort via good organization, proceeds by maintaining the reader's interest with a compelling story, and culminates with communicating in a manner that makes the reader feel comfortable and identify with the writer.

Audience Interest in Facts Is Maintained by Stories

Just as carefully targeting submissions to agencies is integral to grant writing, perspicuity is needed as a way to respect the time of grant readers. "Because many evaluators receive an unmanageable number of long, poorly written proposals, brevity and clarity should be the goal when writing each part. Include just enough in each part to do the job, and the job, of course, is to communicate clearly and persuasively" (Henson, 2004, p.31). It is also important to determine if the proposal evaluators will be experts in the field or if the content must be explained in layman's terms. Effective grant proposal writing employs language which is clear and simple to understand, direct and forceful to grab and hold attention, concise so as not to waste time, and positive with avoidance of negatives that slow reading (Henson, 2004). Simple, straightforward language, however, need not be dull. "Powerful and clear sentences can be written by placing a concrete subject at the beginning of the sentence and following it immediately with an action verb written in the present tense" (Henson, 2004, p.86). Expert advice on grant writing recommends creating clear and concise communication with a direct and forceful style to make reading and understanding easier and using action verbs to enliven the presentation of facts. A "forceful style" might repel some readers; modality analysis helps grant writers determine which styles are appropriate for an audience, as noted in Step 3 below.

Keeping the reader interested is a concern. Grant writers are advised to create an interesting narrative about the benefits that will result from a proposed project with an emphasis on sympathetic beneficiaries of the project (for example, at-risk teens, underprivileged children, populations of cute and furry animals, or the environment that our grandchildren will inherit). "One

of the most powerful routes to improving instruction while producing substance for grant proposals is story telling" (Henson, 2004, p.70). For the ancient, Greek philosopher, Aristotle, a story involves setting the scene and identifying a conflict in the beginning, showing how things play out in the middle which culminates in a climax, then resolving the conflict in the end so as to provide the audience with a cathartic release of emotions such as pity and fear (as cited in McKeon, 1947, pp.634-641). In a proposal, the current situation, the persons involved, and the desired outcome can be naturally described via a beginning, a middle with a climax, and an end with a resolution. Every story has an antagonist, a protagonist, a setting, and a conflict as well as a resolution.

Cheryl A. Clarke (2001), an accomplished grant writer, points out that even program officers (people who review grants) love a good story (p.xx). She goes on to say that a "storyteller's goal is to engage, or 'hook,' a reader with the first few sentences or paragraphs of the narrative" (p.37). The first step is to set the scene (constraints of time and place involved in the current situation that must be changed). Then, the narrative should introduce the hero. "It may come as no surprise that the hero in every proposal is the non-profit agency" (Clarke, 2001, p.41) or research institution that is seeking funding. Introducing the hero involves establishing the credibility of the project's team and showing that this team has the ability to accomplish the goal. Other characters in the story include the beneficiaries of the proposed project who might be youth at risk, abandoned elderly, or local citizens afraid of crime (Clarke, 2001). Once the setting and the characters have been made to feel real to the audience, the plot then builds tension as the conflict (problem) is introduced (Clarke, 2001). "Tension continues to mount until the tale reaches its climax" (Clarke, 2001, p.49). The climax is resolved by applying a solution—something done by the hero. The grant-making agency is depicted as enabling the protagonist/hero to perform the actions necessary to save the intended beneficiaries from the horrible antagonist (problematic situation or negative societal force) they face (Clarke, 2001). Quotes from people who have been helped by the grant-seeking agency in the past, or from those who currently face the difficult problem and desperately desire a solution, can help to put a credible voice to the characters in the story

Karina Stokes

(Clarke, 2001). Qualitative needs can be established on this kind of personal level via surveys of the opinions of afflicted persons, and then the success of the project can be evaluated by similar surveys and quotes from satisfied beneficiaries of the completed project. Scientific research projects, on the other hand, typically require quantitative data to document the "before" and "after" conditions, so putting a personal voice with the information might be more challenging, but it is not impossible. Presenting the proposal narrative as a story, with characters that make the readers want to care about them, is considered one of the best ways to keep a description of a project plan organized and interesting.

Using Story Boards Helps Organize Facts into Stories

One communication specialist, Cliff Atkinson (2005), even suggests creating a storyboard to organize any information aimed at winning the attention of an audience; he recommends a three-act arrangement (like Aristotle's plot) involving "setting up all the key elements, including the setting, the main character, a conflict, and the desired outcome" (p.23). Act 1 should answer five questions for the audience: where and when are we, who are we, why are we here, what do we want to happen, and how do we move from the current situation to the solution (Atkinson, 2005). The second act develops the action by appealing to emotion and reason; this segment will "include only information that supports your reasons for recommending the solution and exclude everything else" (Atkinson, 2005, p.53). The rational appeals in act 2 should include three good reasons for accepting the recommended course of action. The final act focuses on the resolution of the conflict by restating the problem, recommending a solution, bringing the action to a climax, and reinforcing the resolution with an emotional appeal (Atkinson, 2005). Herrick (2005) explains how, in Book II, chap 1-11 of *Rhetoric*, Aristotle shows that pathos (appealing to emotions) involves the psychology of emotion and putting the audience in the right frame of mind to accept what a speaker is saying, and the purpose of pathos is to move the audience to action, to prompt them to do what the speaker wishes (pp.83-84). The storyboard strategy for organizing information simplifies complicated concepts so as to hold the interest of an audience. Atkinson (2005) notes that story structure "can help you to focus your ideas, clarify your words and

images, and produce an engaging experience for both you and your audiences" (p.21). A storyboard for a grant proposal might follow the outline depicted in Figure 3 that uses an example of a neighborhood in which crime is drastically rising and residents decide to start a Neighborhood Watch program in response.

Step 3: Select an Effective Rhetorical Approach

Once the content and arguments are organized, a successful grant writer selects words and phrases that accurately and concisely explain a project in a way which reflects the funding source's values and beliefs and which uses appropriate communication styles. "Understanding the thinking and values of the granter is critical to being successful; too many grant seekers understand only their own beliefs and thus write from a narrow perspective" (Chavkin, 1997). Success requires writing an interesting account of a project description in a manner that demonstrates shared values between the project team and the funding source.

Use Rhetoric to Identify with the Audience

Kenneth Burke might view the kind of sharing of values that is needed between a grant writer and his/her audience in terms of identification and consubstantiation. In "A Rhetoric of Motives" (1950), Burke explains an approach to language analysis and use that aims at enhancing one's understanding of the basis of conflict, the virtues and dangers of cooperation, and the opportunities for identification (perceived as the same) and consubstantiality (being of one substance). Identification involves shared principles, values, and/or interests: "*A* is not identical with his colleague, *B*. But insofar as their interests are joined, *A* is *identified* with *B*" (Burke, 2001, p.1325). Burke takes this idea further. "To identify *A* with *B* is to make *A* 'consubstantial' with *B*" (p.1326). Persuasion requires creating identification between a writer and an audience, and such identification can be accomplished by showing commonalities in attitudes and styles of communication as well as in principles and values. As Burke puts it, "…in acting together, men have common sensations, concepts, images, ideas, attitudes that make them *consubstantial*" (p.1326). When ideas and values are

Modality Approach to Grant Writing

communicated in a way that enhances shared imagery and sensations, feelings of being joined can also be enhanced.

Understanding not only the values, but also the communication style preferences of grant reviewers, may help a grant writer to identify with his/her

Act I – setting up the story – where, when, who, why, what, how	
Setting	A working class neighborhood of 82 houses
Protagonist	Our community and your grant-making agency working together
Imbalance faced	Rising crime rates are threatening to ruin the lives of 82 American families with fear / threat of serious losses (property and maybe life)
Balance sought	The original peace can be restored to these families
Solution to pursue	Training a volunteer Neighborhood Watch program can empower residents to reduce crime and eliminate fears that currently grip them
Act II – developing the action with facts and evidence	
Main point 1 Neighborhood Watch programs work	Supporting point 1.1 evidence from research
	Supporting point 1.2 evidence from other Neighborhood Watch programs
	Supporting point 1.3 evidence from local police department crime reports
Main point 2 The residents of this area are properly motivated	Supporting point 2.1 48 neighbors made commitments to participate
	Supporting point 2.2 elderly and disabled folks agreed to provide coffee
	Supporting point 2.3 parents of small children agreed to provide batteries, etc.
Main point 3 Local police are willing to work with volunteers	Supporting point 3.1 police have given a list of needed safety equipment
	Supporting point 3.2 police will train volunteers on two evenings for free
	Supporting point 3.3 All that is needed is $1,600 to purchase safety equipment
Act III – frame the resolution	
Crisis	[Briefly restate the crisis / problem and its negative effects] Rising crime rates are threatening to ruin the lives of 82 American families with fear / threat of serious losses (property and maybe life)
Solution restated	[Repeat something the audience already knows—the needed solution] Peace can be restored to these families with the right action plan
Climax	[Provide an overall "theme" to bring together all parts of the message] "Neighborhood crime need not be the end of an American community"
Resolution	[Provide a simple, catchy phrase to plant your idea in the minds of the audience and prompt them to view your project favorably] Empowering individuals can revitalize American communities

Figure 3. A Storyboard Template Can Be used for Organizing a Grant Proposal. Atkinson's Storyboards Organize Complex Information with Both Logical Facts and Emotional Appeals

audience. "Grant seekers should know their audience. Key questions to consider are: Who is evaluating the proposal? What kinds of projects does the evaluating group want to fund? What are their interests? It is often beneficial for grant seekers to roleplay what it would be like if they were receiving the request for funding" (Chavkin, 1997). Being able to write in the communication modality of the grant reviewer is one way to play the role of, or identify with, one's audience. To understand and write from the perspective of the proposal evaluators, a grant writer can study the repeated value-laden words as well as the communication modality preferences evinced in the RFP or other communication from the funding source. Just as people have preferred learning styles that make educational tasks seem easier, people likewise have preferred communication styles with which they feel more comfortable. Emulating another's communication modality promotes identification.

Analyze and Match the Audience's Communication Modality

The benefit of matching a grant-making agency's communication style became especially apparent to me when I was preparing grant proposal materials for a Samaritan Center that received funding from the Hogg Foundation to initiate a project aimed at reducing family violence in a high-abuse area of Houston, Texas. In addition to presenting clear facts and persuasive arguments that addressed this funding source's goals and values, I wrote the grant proposal in a style that emulated the preferred communication style of the funding source. To determine communication style preferences, as well as the values and goals, of a funding source, one can analyze its mission statement, RFP, history of the agency, or other publications (printed or online). By focusing on identifying values/goals and communication style preferences, a grant writer may understand what the proposal readers need to know and how they prefer to have information communicated; then the writer can adapt his/her own expression of the project's goals to communication styles preferred by the readers rather than communicating via the writer's preferred verbal style, which may clash with that of the reader and, thereby, make the reader feel uncomfortable with the writer.

One way to determine the values of a funding source is to analyze the mission statement that may be included in the RFP or which one may find through print publications or on the Internet. Many foundations clearly display their mission statements in their literature as well as their Websites. Government sponsored RFPs often include one or more of the following helpful sections: a description of the agency and its activities and goals, a description of the program through which funding is being offered, and/or a statement of the purpose or reason for issuing the current RFP. For instance, the Division of Education Programs within the National Endowment for the Humanities (NEH) offers the following program description:

> Humanities Initiatives for Faculty are intended to strengthen and enrich humanities education and scholarship at Institutions with High Hispanic Enrollment. These grants may be used to enhance the humanities content of existing programs, develop new programs, or lay the foundation for more extensive endeavors in the future. Each project must be organized around a core topic or set of themes. (NEH, 2007)

The description makes it clear that this division of the NEH places value on organized plans for new or improved humanities programs at Institutions with High Hispanic Enrollment.

While government agencies often provide a rationale for offering funding in their RFPs, foundations and corporations typically express their values in a mission statement. The Hogg Foundation for Mental Health provides a statement of its vision and its mission as well as a list of its values. Analyzing these statements (Figure 4) leads to a clear understanding that the Hogg Foundation is interested primarily in promoting mental health in Texas. Thus, projects designed to take place outside of Texas should not apply for funding from this foundation. Further, it is clear that projects involving delivery of services, conducting of mental health research, development of related policies, and educational outreach programs concerning mental health will be more likely to interest the foundation. "A focus on underserved populations and areas of the state" is also stated as a value, which means that projects which serve the needs of ethnic, gender, disability, and

Modality Approach to Grant Writing

economic groups who do not typically receive attention are even more likely to receive funding. The values statement also notes a concern with maintaining the reputation of the foundation, so it would not be likely to fund risky projects but would prefer projects based on proven techniques or sound research. Closely examining a mission statement or program description in a RFP can provide valuable information about the scope of projects that are likely to receive funding from a funding source as well as information about the methods that they would consider acceptable and the beneficiaries that they would prefer to have served.

Knowing what a funding source values allows one to engage in "values-based grantseeking. A common mistake of grantseekers is to write their proposals based

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Vision, mission, and values

Vision

We envision a Texas that leads the nation in promoting mental health and recovery from mental illness, supporting all Texans in achieving their potential.

Mission

The Hogg Foundation promotes improved mental health for the people of Texas through the support of effective mental health services, research, policies, and education. The Foundation works in partnership with communities, service providers, advocates, policy-makers, researchers and educators.

Values

We value:
- Cultural relevance in all aspects of the Foundation's work and philanthropy.
- A focus on underserved populations and areas of the state.
- Evaluating the impact of our grants as well as our own performance as an organization.
- Our role as leaders within the philanthropic community to increase resources for mental health.

(Hogg Foundation for Mental Health, 2006)

Figure 4. Example of a Foundation's Mission Statement that Shows Its Values

on their own values" (Bauer, 1999, p.6). A proposal should demonstrate where the project team honestly shares values with the funding source, especially in the case of a small foundation with personally-involved, dedicated individuals making funding decisions. Analysis of agency publications for content and style can provide grant writers with valuable insight into values as well as preferred communication modalities.

Analyze Modalities to Match Communication Styles

In addition to values and goals, communication preferences can be found in mission statements and other publications from foundations, corporations, or government institutes. The more that funding source personnel are able to understand the way proposal messages are communicated, the more likely they are to feel comfortable with the people they perceive to be behind the writing. One can note the sensory modes used in the RFP and other publications and can match one's own communication style to that of the funding source.

If an agency's RFP includes mostly visual language, then a grant writer can choose visually-oriented words for the proposal even if the grant writer is normally a more auditory- or kinesthetic-oriented person. Further, visual people tend to be fast-paced and don't like to waste time, while kinesthetic oriented individuals like to slow down and get to know people personally. Auditory people rely on one's word as one's bond, so they may hold a project leader accountable to the letter of the law. One can examine documents that a funding source publishes for clues to the sensory modality preferred. Visual, auditory, and kinesthetic communicators tend to choose words that reflect their sensory preferences and communication styles (as shown in Figure 5). Reflecting the preferred word choice can be a good way to invite a grant reviewer to feel comfortable with a grant seeker.

Much has been made of sensory modality preferences in education; there is no reason why the ideas could not also be applied in grant writing as a method of establishing rapport and making educating an agency's personnel about the goals of a project easier. Among educators, the idea is to teach students in ways that match their learning strengths which are differentiated via sensory pathways (Sprenger, 2003). "Since all information is received through our five senses, many researchers feel that a preference is

Visual people say: We want to *see* projects with a *clear vision* of the big *picture*. Perspectives should be *clearly* outlined, and *shortsighted views* must be avoided. [Words tend to be visual (vision, clear, view) and speech tends to be rapid.]

Auditory people say: We request *clear* proposals which *harmonize* with our agency's goals. Questions should be *answered* completely, and all steps should be *amplified precisely*. Proposals should be *in tune with* stated needs. [Words tend to be hearing/verbal oriented (harmonize, hear, words, clear) and speech tends to be verbose and well paced.]

Kinesthetic people say: The agency will consider proposals which are *concrete*, able to *demonstrate* a *firm grasp* of the problem, and *move toward* making a definite *impact*. Ideas must be *solid*; explanations must be *sharp*. [Words tend to be touch/movement oriented (feel, concrete, sense, firm, lively, handle) and speech tends to be slow.]

Figure 5. Examples of Speaking Styles for Different Sensory Modalities

developed for a specific sense (Dunn & Dunn, 1987; Grinder, 1991; Markova, 1992; Sprenger, 2002). Just as most of us develop a preference for using one hand or the other, and that one becomes 'dominant,' many people likewise appear to have dominant sensory pathways" (Sprenger, 2003, p.33). For some people, the one sensory modality becomes so dominant that they must "translate" everything into that modality in order to understand, remember, and recall the information (Sprenger, 2003). Since people tend to understand and remember better the information that comes to them via their preferred sensory pathways, it makes sense that reflecting the sensory modality of a grant reviewer in the writing style of a proposal would allow the proposal to seem more clearly comprehensible and more memorable.

Figures 6 and 7 provide an example that may illustrate the application of sensory modality theory to audience analysis. The example for analysis (Figure 6) comes from online materials about the history of the Hogg Foundation. The results of an analysis (Figure 7) of visual, auditory, and kinesthetic words, as well

as value-laden words, can be seen in this document. The analysis shows that the dominant sensory modality is kinesthetic and values include: education, communication, research, reputation, minorities, culture, employment, and mental health. Thus, the Samaritan Center's proposed project to reduce violence among families in one Houston area ethnic-minority-dominated neighborhood by educating local pastors in mental health diagnosis and referral was correctly targeted to the Hogg Foundation. In writing the proposal to the Hogg Foundation, I translated my naturally visual wording into kinesthetic language, and the proposal was well-received. Performing a modality-based audience analysis on a mission statement or program description in a RFP, as well as a search through the content for value-laden words, before writing any grant may enable grant writers to better attune their language to that of the reviewers and, perhaps, even understand them better so as to establish a more comfortable sense of rapport, trust, and identification. This can help to establish a partnership that supports a project in which both have become invested.

Practical experience with modality analysis

When the Samaritan Center initially applied to the Hogg Foundation to fund a project in 1999, they were not prepared for a response that required significant further clarification. I was hired by the Samaritan Center to figure out what the funder wanted. When I explained the foundation's expectation for specific kinds of content (needs, goals, objectives, and evaluation plans), and I recommended a particular communication style (kinesthetic) for writing an effective proposal, the center director was initially confused because he had read the "expert" advice on grant writing, which did not provide explanations of anything like using modality-based analysis for establishing rapport. I explained that effectively depicting the value of a project involves more than just presenting facts in one's own fashion. Instead, effective grant writers can utilize the preferred communication style of a funding source in order to create a rhetorical approach that appropriately engages the audience and clearly explains the match in the values and interests of the funding source and the organization seeking funding.

When submitting a grant proposal to a private funding agency, such as the Hogg Foundation, it is

Modality Approach to Grant Writing

The Hogg Foundation for Mental Hygiene was created in 1940 under the leadership of sociologist Dr. Robert Lee Sutherland. Its initial mission was to educate the people of Texas about the then little-known concept of "mental hygiene" by sending experts and scholars across the state to promote the positive, preventive, and therapeutic aspects of mental health. By 1950, the Foundation's educational mission had expanded to incorporate a communications program which was developed to produce pamphlets and radio broadcasts that responded to public concerns about the care and treatment of the mentally ill. The Foundation played a critical role in the drafting of revisions and improvements to the code governing the Texas State Hospitals and Special Schools. In 1955, the Foundation decided to complement its communications efforts by awarding grants for basic and applied research, training, and fellowships to better address emerging mental health challenges. As the 1950s ended, the Foundation changed its name to the Hogg Foundation for Mental Health.

By the 1960s, the Foundation's grantmaking program grew to encompass projects demonstrating new ideas in mental health services, expanding the Foundation's role to include convening, communication, research and grantmaking.

By the time psychologist Dr. Wayne Holtzman was named to succeed Dr. Sutherland as executive director, the Foundation had established itself as a leader in philanthropy across the southwest.

With Miss Ima Hogg's passing in 1975, she bequeathed her own legacy to create the Ima Hogg Endowment to support mental health service projects dedicated to the needs of children and their families in Houston. On the passing of Dr. Sutherland, the Sutherland Chair in Mental Health & Social Policy was created at The University of Texas at Austin's School of Social Work. In addition, the Foundation initiated a series of biennial Robert Lee Sutherland Seminars, the first being held in 1978. Over the years, the Sutherland Seminars have convened thousands to address mental health issues.

The Foundation's continued growth through the 1980s culminated with the creation of the multi-million dollar School of the Future project, which provided an integrated spectrum of both prevention and treatment services for lower-income schools in Austin, Dallas, Houston, and San Antonio. To this day, parts of the effort continue to operate in three of the original sites.

In 1993, Dr. Wayne Holtzman stepped down and Dr. Charles Bonjean was named the Foundation's new executive director. Dr. Bonjean's emphasis upon strengthening the Foundation's work in the areas of collaboration and convening led to the sharpening of its focus upon three priority program areas: Children and Their Families, Youth Development, and Minority Mental Health.

In 2002, Dr. Bonjean retired and was succeeded by Dr. King Davis as executive director. The change in leadership prompted another opportunity to assess the Foundation's capabilities to address emerging challenges in mental health.

Today's Hogg Foundation
Under Dr. Davis' leadership, the Foundation has not only revitalized its mission, vision, and goals, but is embarking on a new chapter to making substantive contributions to mental health services, research, public policy, and public education for Texas and the nation.

Early in his tenure, Dr. Davis began exploring how the Foundation's grantmaking approach could be modified to have a larger impact on the delivery of mental health services in Texas. In discussions with stakeholders around the state and nation, he determined that the Foundation could increase its leadership in the field by moving from funding unsolicited grant proposals on various topics to targeting its grant monies in Texas' specific areas of need.

In 2005, the Foundation underwent an intensive strategic planning process to determine how best to invest its limited resources. Foundation staff held a series of meetings with numerous state and national stakeholders to assess the most pressing issues in the field, with the goal of identifying critical areas in which the Foundation could have a significant impact.

It was through this process that the Foundation selected its three priority funding areas: Integrated Health Care, Cultural Competence, and Workforce Development.

The Foundation is focusing its resources in these areas for the next several years. In moving Texas forward on each of these fronts, the Foundation will enlist its leadership and resources to achieve its mission to improve the mental health of all Texans. (Hogg Foundation for Mental Health (2006))

Figure 6. Example for Analysis: Hogg Foundation History

not unusual for the agency to engage in an ongoing relationship of mutual cooperation and oversight. This scenario is especially likely when the funding source has

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Visual words: spectrum, focus, vision, focusing

Auditory words: communication, named

Kinesthetic words: sending, across, produce, responded, care, basic and applied, grew, encompass, demonstrating, expanding, established, create, support, service, created, held, creation, integrated, operate, sites, stepped down, strengthening, areas of collaboration, sharpening, emerging, revitalized, substantive, exploring, approach, impact, delivery, moving, targeting, held, pressing, impact, through, areas, moving, forward, fronts

Value words/phrases: initial mission was to educate the people of Texas about the then little-known concept of "mental hygiene", the Foundation's educational mission had expanded to incorporate a communications program, played a critical role in the drafting of revisions and improvements to the code governing the Texas State Hospitals and Special Schools, awarding grants for basic and applied research, training, and fellowships to better address emerging mental health challenges, established itself as a leader in philanthropy across the southwest, culminated with the creation of the multi-million dollar School of the Future project, which provided an integrated spectrum of both prevention and treatment services for lower-income schools in Austin, Dallas, Houston, and San Antonio, three priority program areas: Children and Their Families, Youth Development, and Minority Mental Health, making substantive contributions to mental health services, research, public policy, and public education for Texas and the nation, three priority funding areas: Integrated Health Care, Cultural Competence, and Workforce Development, its mission to improve the mental health of all Texans.

Assessment: The dominant sensory modality is kinesthetic with an emphasis on values such as education and communication, research, reputation, minorities, culture, employment, and mental health.

Figure 7. Analysis of Hogg Foundation History Text

a kinesthetic (hands-on) communication preference. Based on my targeted writing style and clear content, the Hogg Foundation and the Clear Lake Samaritan Center developed a partnership of trust, and the proposed community mental health initiative was funded. As an added bonus, it was very rewarding to be able to mediate a process of establishing rapport between two groups of people that both wanted to serve the community.

Example of Modality Analysis Applied to a Government RFP

Modality analysis need not be restricted to foundation grants. In order to make the modality analysis process more clear, I have added an additional example involving part of a RFP for a program sponsored by the U.S. Department of the Army. The text (Figure 8) describes the purpose/goals of the program. The analysis (Figure 9) displays the results which indicate that the dominate communication modality is visual and the values include supporting early-career scientists in the eradication of breast cancer via creative means.

Further Research and Applications are Needed

In addition to a foundation grant, I have succeeded in attaining funding from the NIH and the TEA, and I helped others use these techniques in DOE grants. My experience with several successful grants, however, is still only my experience. It would be interesting to see how many other grant writers might improve their success rates by applying modality analysis to their repertoire of techniques. I encourage other grant writers to use the ideas presented here and decide for themselves if these techniques are helpful.

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Modality Approach to Grant Writing

The Breast Cancer Research Program (BCRP) Era of Hope Scholar Award supports individuals who have high potential for innovation in breast cancer research early in their careers. Nominees should be exceptionally talented, early-career scientists who have demonstrated that they are the "best and brightest" in their field(s) through extraordinary creativity, vision, and productivity. They also should exhibit strong potential for leadership in the breast cancer research community and be able to articulate a vision for the eradication of breast cancer. Individuals should challenge current dogma and demonstrate an ability to look beyond tradition and convention. The Era of Hope Scholar Award proposal must focus on the Principal Investigator's (PI's) record of creative and original accomplishments, potential for leadership in the breast cancer research community, and vision for eradicating breast cancer. These aspects of the proposal will receive greater emphasis in the review process than the proposed research project, although the proposed research project also will be considered. Experience in breast cancer research is not required; however, the proposal must focus on breast cancer research and the PI must commit at least 50% of his or her full-time professional effort during the award period to breast cancer research. Individuals must be nominated to be considered for this award mechanism; self-nominations will be accepted. Do not submit an Era of Hope Scholar Award proposal unless you receive a letter of invitation.

(Dept. of the Army. <http://www.grants.gov/search/search.do?oppId=13127&mode=VIEW>)

Figure 8. Example for Analysis: Dept. of The Army Program Description RFP Text

Visual words: brightest, vision, vision, look beyond, focus, vision, review, focus

Auditory words: articulate

Kinesthetic words: supports, strong, emphasis

Value words/phrases: potential for innovation in breast cancer research, early-career scientists, the eradication of breast cancer, challenge current dogma, record of creative and original accomplishments.

Assessment: The dominant sensory modality is visual and kinesthetic is secondary. The emphasis is on values such as innovation, creativity, leadership, originality, and eradicating breast cancer.

Figure 9. Analysis of Dept. of The Army Program Description RFP Text

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Books Reviewed in This Issue

Graphic Design Thinking: Beyond Brainstorming

Ellen Lupton, Ed. 2011. New York, NY: Princeton Architectural Press. [ISBN 978-1-56898-979-2. 184 pages, including index. US$24.95 (softcover).]
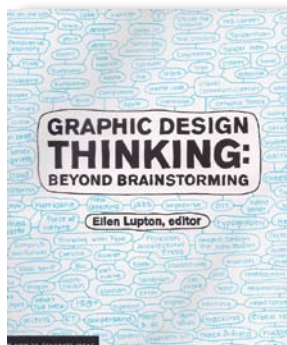
An oft-used definition of graphic design is "problem solving." Lupton's new book, *Graphic Design Thinking: Beyond Brainstorming*, effectively shows readers how to use graphic design thinking in solving their graphic design problems based on her collaborative work with the students and faculty at the Maryland Institute College of Art (MICA). The MICA design process has three phases: defining the problem, getting ideas, and creating form. Lupton defines and then summarizes the MICA process in an effective example in the introduction. She then expands on each phase in the book.

Graphic Design Thinking is a useful reference because the three phases are clear, concise, and practical. Its format also exemplifies all the points Lupton and the team describe. The table of contents lists the phases and the techniques, becoming a useful job-aid. The introduction spells out the design process in a graphic format, illustrated with what appear to be hand drawings. Lupton follows a MICA project through the graphic design phases to demonstrate how the team-based process works.

Each MICA phase has its own chapter: the first two-page spread defines the phase while the remainder of the chapter includes the techniques. The book effectively uses a combination of photos and drawings without borders to illustrate many concepts and examples.

The techniques for each phase comprise the book's core. The left-hand page clearly defines each technique and the facing page has the steps and tools needed for implementing that technique. Each technique concludes with one or more Case Studies. Lupton says that these case studies include team-based approaches, the approach used in many work settings. One can use these techniques individually to enhance their own designer skills.

Phase 01, How to Define Problems, includes nine techniques from the general problem defining Brainstorming and Mind Mapping techniques to Brand Books and Creative Brief, which are more geared to graphic design.

The Case Studies are especially useful in showing the eleven techniques in Phase 02, How to Get Ideas. Alex F. Osborn says that the Using Action Verbs technique "involves taking an initial idea and applying different verbs to it" (p. 74). An example is to take a couch and flatten, magnify, or invert it. Visual Diaries and Icon, Index, Symbols are other techniques that designers can use to stimulate getting new ideas.

How to Create Form, Phase 03, is putting the ideas into practice. The Sprinting technique forces designers to determine a new solution within a given time frame. Other techniques include Creating a Mock Up and Using Unconventional (artist) Tools. Lupton shows visual examples for Building a Brand Language, yet people in other fields can do this with words alone. The last chapter includes quotes from numerous graphic designers on how they get into a creative mood, how they create form, and how they edit.

This well-crafted book is a good action plan for solving visual and other business problems.

Beth Lisberg Najberg

Beth Lisberg Najberg develops custom training solutions for large corporations and public entities. She incorporates graphics into materials to explain processes and concepts. Beth also teaches people how to create effective presentations. She has been making information useful and graphic professionally for more than 30 years.

The Copyeditor's Handbook: A Guide for Book Publishing and Corporate Communications, With Exercises and Answer Keys

Amy Einsohn. 2011. 3rd ed. Berkeley, CA: University of California Press. [ISBN 978-0-520-27156-2. 560 pages, including index. US$24.95 [softcover].)
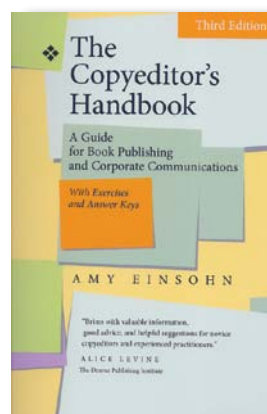
To paraphrase Ecclesiastes, "of the making of editing books there is no end." Most editors own at least one such book; my wife and I, both editors, own more than a dozen, and Einsohn's book is a worthy addition to our collection. Besides discussing all the usual suspects (punctuation, hyphenation, grammar), Einsohn covers the basics of copyediting (tasks and procedures, essential references, relationships with authors), and provides copious examples and explanations of why something is problematic and how understanding the problem can lead to solutions. Throughout, the wording is clear, even when dealing with the often difficult language used to describe grammar. The core topics are handled with encyclopedic knowledge, clarity, and well-chosen examples, often supplemented by the words of influential authors and editors who provide useful insights.

Given the monumental task of mastering not only a language, but also key dialects of that language such as "science", any such book faces the problem of scope: no single book can cover everything. But an egregious omission is that Einsohn devotes only three pages to onscreen editing and how it integrates with the processes and problems she covers; worse, the sample illustrations of editing markup are exclusively for typescripts. The importance of onscreen editing in modern editorial workflows (on-paper editing is increasingly rare) makes this a significant problem. Given the book's emphasis on copyediting, it appropriately focuses on this core subject, but the discussions of several areas (for example, onscreen editing, graphics) should have been supported by citations of key references on these topics, as was done for grammar and usage guides.

Though this book is aimed at new editors, the goal is to teach readers how to think about editing processes and problems. Rather than simply prescribing rules, Einsohn clearly distinguishes between wordings that are unquestionably wrong, wording "problems" that are a matter of opinion (surprisingly many grammatical issues fall into this category), and wording that is merely more difficult than necessary to understand, all in aid of illustrating the editorial thought process. Chapter 14, where Einsohn diplomatically chastises the prescriptivists without forgetting that many of us learned our grammar from such people, is a breath of fresh air on these points. Supported by a decent index, *The Copyeditor's Handbook* achieves its additional goal of supplementing popular guides such as *The Chicago Manual of Style*. As a result of Einsohn's choices, the book nicely supports an introductory copyediting course, with most chapters offering at least one exercise to help you test your knowledge, accompanied by an answer key. But it also provides a great refresher course for experienced editors, as well as a useful reference on thorny points of grammar and usage that is less doctrinaire and better reasoned than some alternatives.

Geoff Hart
Geoff Hart has been editing for nearly 25 years, and wishes he'd had this book to learn from when he was getting started.

The Non-Designer's Presentation Book

Robin Williams. 2010. Berkeley, CA: Peachpit Press. [ISBN 978-0-321-65621-6. 168 pages, with index. US$24.95 (softcover).]
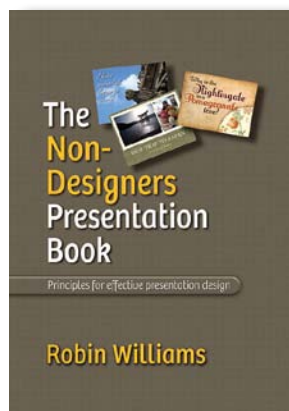
Robin Williams has done it again. The reliable Williams has written another book that is a must-have in your reference library. It is a book that you will refer to repeatedly for inspiration and confirmation that you can be a terrific presenter no matter what your content.

If you attend many seminars and presentations, you might want to buy multiple copies of the book. That way you'll feel free to share Williams' wisdom with presenters who read their slides, embellish with unrelated art/logos/photos, and vary each slide's formatting so much that your head spins. It is hard to learn much from presenters who don't prepare and who don't hold your attention. Help them out!

This volume, part of Williams' Non-Designer series, covers more than slide formats. It includes the all-important steps that you (or your boss) should take before you start designing slides: thinking about the presentation content and organizing it. In the second section, which Williams calls "optimizing the content," she walks you through winnowing down sentences to pithy bullet points, presenting them cleanly, and in a logical order (think story telling), with enough space to showcase your main points.

Then it's on to the design of the slides. (Interesting, isn't it, that she doesn't start with the design? Something to remember!) This section is filled with beautiful before-and-after examples of well-designed slides that support the subject matter. The final section deals with learning your software and listening to your presentation.

Bless her, Williams covers one of my personal pet peeves about the ubiquitous Microsoft PowerPoint. You know that supposedly helpful option ("autofit") that reduces the point size of your text as you add words to a slide? Did you know that you "can" turn that feature off? You can and should. Your slides and presentation will be the better for it.

The Non-Designer's Presentation Book is marvelous. Written in a breezy yet highly informative style, the book is packed with examples that make the principles Williams espouses easy to understand and remember.

You want this book. You probably need this book. It could be the best $25 you spend this year on reference materials.

Ginny Hudak-David
Ginny Hudak-David is the senior associate director in the Office for University Relations at the University of Illinois, which has campuses in Urbana-Champaign, Chicago, and Springfield.

Understanding Color: An Introduction for Designers

Linda Holtzschue. 2011. 4th ed. Hoboken, NJ: John Wiley & Sons, Inc. [ISBN 978-0-470-38135-9. 259 page, including index. US$65.00 (softcover).]

Color plays a part in everyday life; designers specifically choose many of the colors. I remember learning about color in third grade; the teacher put the three primary light colors on the overhead projector to prove that color mixes differently as light than as paint. *Understanding Color* expands on those classes, explaining basics like the color wheel, to more complex issues like the bezold effect and fluting.

Understanding Color covers everything from what makes color to how color interacts to how designers work with color. Most of the book is about color basics, which can be a mind-boggling topic. More than one person has had a hard time wrapping their mind around light. I learned a few interesting facts. For example, the possible effect of mathematical harmony on having seven colors for the ROYGBIV (red-orange-yellow-green-blue-indigo-violet) color wheel even though most people cannot distinguish indigo. "Despite his genius, Newton was a product of the seventeenth century. He may have elected to include seven colors because the number corresponded to the musical notes of the diatonic scale" (p. 135).

Holtzschue's explanations are thorough to ensure that you use the same vocabulary. She defines that "*Lamps* are the principal man-made light source. 'Lamp' is the correct term for a light bulb. The fixture that holds the lamp is a *luminaire*" (p. 22). You can always have the glossary to use if you forget what a term means when it comes up later.

Many graphics illustrate each point. Two illustrations of leaves, one blue/green and the other red/orange, illustrate that *"analogous color groupings contain two primaries but never the third"* (p. 75). Nearly every page has some graphic illustrating a recent idea that while not always referenced or adjacent to the related section, the caption does clearly define them.

The book's last two chapters contain information about how color applies specifically to designers. The most important point is that "printed colors, for example, are not exactly the same as product colors; designers strive only to get the closest possible match" (p. 189). Much of the information is on the history of how designers have used color, and this is where Holtzschue discusses how to work with monitors. Yet, it seems a big oversight to not cover color-blindness in a book on color for designers. She may have skipped this information since the book does not cover how to use color. Holtzschue does explain the history of color theory and the expansiveness of the field.

I would have liked information about how to apply the various color ideas in design. A PDF workbook is available that includes a lengthy supply list and involves plenty of variation.

Understanding Color is a great place to start learning about color. It contains the information you need, how color interacts, before you start learning about color theory, and how to use color interactions for an end result.

Angela Boyle
Angela Boyle is a technical writer for Tyler Technologies, Inc., where she has worked for four years. She graduated from the University of Washington with a BS in Technical Communication.

Introduction to DITA: A User Guide to the Darwin Information Typing Architecture

JoAnn Hackos. 2011. 2nd ed. Denver, CO: Comtech Services, Inc. [ISBN: 978-0-9778634-3-3. 424 pages, including index. US$50.00 (softcover).]

Before I review Hackos's *Introduction to DITA*, I want to share my background regarding the author and the Darwin Information Typing Architecture (DITA). My first introduction to Hackos came in graduate school where a professor used her *Managing Your Documentation Projects* as a course textbook. I loved the course and feel that much of my success in managing documentation projects comes from what I learned. Having used DITA since 2006 to complete most of my work deliverables, I am comfortable with the standard.

In this second edition of *Introduction to DITA*, Hackos provides a thorough guide that all readers can expect to use frequently. The book is structured in six parts: DITA overview; DITA topics (100 pages of detail about topics, elements, and metadata); DITA maps (120 pages of detail about structuring maps, including attributes); content reuse (how to use DITA to support single-sourcing information); the DITA information development environment (how to specialize DITA implementation for the unique needs of your assignments); and processing (convert DITA files to output your customers need).

Except for Part I, each part includes lessons and questions to ensure you can apply the information that has been presented. The book also includes a helpful Table of Contents (p. i), Introduction (p. 1), and Index (p. 407). I find no flaws in any of these resources.

There are two appendices: Appendix A (p. 363) provides 30 pages of sample DITA content that is very applicable and Appendix B (p. 395) identifies the many, but not all, elements (tags) that you need to apply the DITA standard. If you use Appendix B along with the Index, you should be able to find any information that you need regarding elements.

DITA experts may skip some sections in each part, but I find all of the information helpful as I know I have

developed bad habits regarding tagging. After reading the book, I find I am more contentious about applying the standard and ensuring consistency across libraries.

While there are many virtues to this book, I love how Hackos addresses her audience. She assumes you are an intelligent professional. As she presents the facts about the standard, she provides many ways for you to apply the information.

The lab-type scenarios are not tasks that you mindlessly complete. You learn how to apply DITA with the samples that are easy to extrapolate to the needs of your writing assignments. After you read this book, you can take any type of information, and create DITA maps and DITA topics that can be converted to print and online formats.

Reviewing this book has not been a disappointment as I have found it to be full of resourceful information.

Angela Robertson

Angela Robertson is a technical communicator at IBM in Research Triangle Park, NC. Angela has a Master's of Science degree in Technical Communication from North Carolina State University.

Organizational Change: Creating Change through Strategic Communication

Laurie Lewis. 2011. Chichester, UK: Wiley-Blackwell. [ISBN 978-1-4051-9189-0. 300 pages, including index. US$44.95 (softcover).]
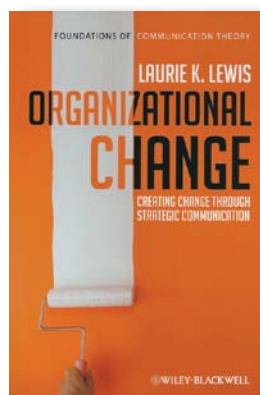
Organizational Change: Creating Change through Strategic Communication is a great read for anyone who has an interest in implementing organizational change. Lewis uses real world examples by exploring three case studies throughout the book. The examples made the concepts of her perspective interesting and accessible to someone with little-to-no domain knowledge.

Lewis explains that changes are enacted for a variety of reasons, from the desire to be innovative to mandates by regulatory forces, however they share the goal to be successful. This expected result is contingent upon the process in which the change is applied. A wealth of research on organizational change in multiple disciplines exists in the book, yet there is little to connect these major ideas and approaches. Lewis in an effort to bridge this gap pulls from research and theories that cross a range of disciplines providing a fresh perspective of change implementation. The change process in an organization involves many who have a stake in the change including those implementing it to those affected by it and its outcomes. Lewis's perspective not only emphasizes this social complexity, but also the importance of strategic communication.

Each chapter in this book is comprehensive by offering tables, diagrams, and expanded examples in a highlighted box. I appreciated these elements because they added to my understanding of the concepts. In addition, Lewis using a case study shows how to put the concepts into practice.

Dawn Sakaguchi-Tang

Dawn Sakaguchi-Tang has a Masters in Human-Centered Design and Communication from the University of Washington. She is currently working as a research consultant for a user centered design agency.

Amglish in, Like, Ten Easy Lessons: A Celebration of the New World Lingo

Arthur E. Rowse. 2011. Lanham, MD: Rowman & Littlefield Publishers, Inc. [ISBN 978-1-4422-1167-4. 240 pages, including index. US$16.95 (softcover).]
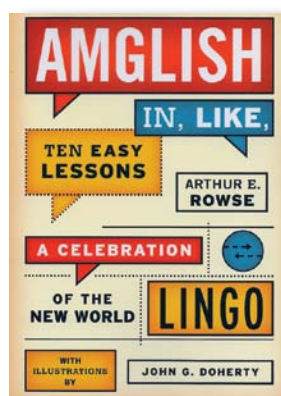
Rowse provides a half-serious, half-hilarious look at increasingly informal American English, which he calls Amglish. But Rowse is to Amglish as Stephen Colbert is to conservative politics: tongue planted firmly in cheek. John Doherty's spot-on illustrations make Amglish even funnier (picture Tina Fey and Mark Twain sharing a smoke and a joke).

Rowse claims that English, like all languages, undergoes a constant revision through word adoption,

invention, and adulteration. Our American ancestors created tongue-twisters like "hornswoggle" (to cheat), "rambunctious" (unruly), and "conbobberation" (ruckus). Today's language pioneers have given us "digerati" (the computer-empowered), "greenwash" (ecologically friendly), and "carbon footprint" (impact on the planet).

Amglish, born out of 1960s American counterculture, is shedding the whalebone restraints of school grammar and slipping by ruler-wielding language police. Punctuation is passé, spelling flexible, and adverbs definitely extinct. Skip the subjunctive tense. Penmanship? So last century! Fit your thought into less than 140 characters or forget it.

Inventive new Amglish features include filler words like "like" and "you know" which give timid speakers time to think of what to say next. "[E]xperimenting is in and conformity is out. . .," (p. 23) says Rowse. "I" becomes "me" as "Bob and I will be going," becomes "Me and Bob will be going" (p. 23). "The little word *at* has become very popular. . ." (p. 26) "Where are you?" is often written "Where you at?" Rowse believes that American English is the greatest US export. No matter how hard the French Academy, the German Language Association, and other fusspots struggle to repel the foreign invaders, such hardy words as "e-mail," "podcasting," and "supermodel" show up daily in their local print and on TV. Of course, word adoption goes both ways and English has acquired many (particularly European) words such as "bonus," "calculus," and "domain" (from Latin); "bureau," "omelet," and "unique" (from French); "hamburger," "kindergarten," and "wanderlust" (from German).

Evidence of the Amglish's international connections is apparent from Rowse's list of "lishes," mixtures of English with other languages. How many of these combinations can you guess?: Arablish, Chinglish, Dunglish, Finglish, Frenglish, Gibberlish, Greeklish, Hinglish, Italish, Janglish, Konglish, Manglish, Paklish, Porglish, Runglish, Singlish, Spanglish, Swenglish, Taglish, Tibetlish, Turklish, Vietlish, and Yidlish.

What are Rowse's "ten easy lessons" for Amglish speakers? Here they are, to be taken, like, with a grain of salt: 1. Go with the flow. (Life is short. Don't sweat the details.) 2. Better to phone than write. (Writing is so overrated.) 3. Fudge the grammar. (Become a journalist.) 4. Be creative with language. (Invent a word today.) 5. Abbreviate where possible. (Give your thumbs a rest.)

6. Let words spell themselves. (Blame it on spell-check.) 7. Disconnect the dots. (Commas, what commas?) 8. User fillers, like, a lot. (Hey, they're better than "uh" and "ah".) 9. Kill obscenities with excess. (Maybe they will just go away.) 10. Learn to code-switch. (Become "cool-smart" by using the lingo that fits your current scene.)

Mike McGraw

Mike McGraw is a senior staff technical writer for Qualcomm, Inc. in San Diego, California. His team helps Qualcomm engineers with information management systems such as SharePoint, Jive, and wikis.

Scientific English: A Guide for Scientists and Other Professionals
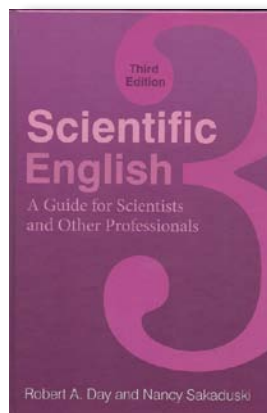
Scientific English seeks to make scientific writing, whether in a blog or a journal, "beautiful in its elegant simplicity" (p. 11). Unlike other scientific writing guides (including Robert A. Day's *How to Write and Publish a Scientific Paper*), this book addresses more than just formal traditional scientific articles, with their standard sections (introduction, methods, etc.) and their graphs and figures. It focuses more broadly on scientific language itself. Sample chapter titles include "Words," "Action Words (Verbs)," "Voice, Person, and Tense," "Sentences," "Clauses," etc. In addition, this book includes a chapter on communicating science in emails, blogs, and other types of electronic media.

Each chapter has enough examples and depth to be a good reference. Day and Sakaduski make references to placing commas around appositives (p. 136), abbreviating scientific units (p. 94), and using numbers as part of an adjective (p. 145). Quotes from famous scientists often lighten the discussion, as do many of the authors' own short and often funny comments. The appendices present

punctuation principles, problem words and expressions, and words and expressions to avoid.

Scientific English also does a very good job of showing how one can improve individual sentences. Its chief virtues are its wealth of examples (new in this edition) and the special care it gives to the trickiest parts of scientific writing. The authors say that scientists often produce "sentences that are difficult at best and incomprehensible at worst" (p. 58). One bad habit is nominalization, a tendency to replace verbs with nouns or noun phrases. Another is the habit of writing in the passive voice, which seems to have become academic and authoritative. Of course, many writers use the passive voice for the right sentences (*Scientific English*'s authors challenge us to improve upon sentences such as "Petri dishes are made of plastic" and "His invention has been superseded" (p. 126). In addition, the passive voice is often mandatory in the methods section of a traditional paper. Yet it does appear where it isn't wanted, and it is often linked to or caused by unnecessary nominalizations.

The book's most concise and elegant section talks about verb tense. A few excellent examples show why a scientist must use the past tense for current work and then use the present tense for past results. Day and Sakaduski recommend avoiding the use of the perfect tense. A few "before-and-after" examples show how rephrasing can improve a sentence's clarity.

Such examples, which appear throughout this third edition of *Scientific English*, contribute to its overall success. Only occasionally does its light tone and humorous phrases go too far. For instance, it is flippant when discussing how to express different levels of scientific certainty (p. 43). This is a tricky task, especially for non-native English speakers, and should get more attention. *Scientific English* overall is an excellent guide for those people writing scientific English, from peer-reviewed journals to blogs, online comments sections, grants, and social media.

Jake Ashcraft
Jake Ashcraft has worked as a teacher, manager, and writer in the scientific sector for more than 10 years. He recently graduated from the Technical Communication program at the University of Washington, where he focused on scientific communication. He is a tenure-track professor of chemistry at South Seattle Community College.

The IBM Style Guide: Conventions for Writers and Editors
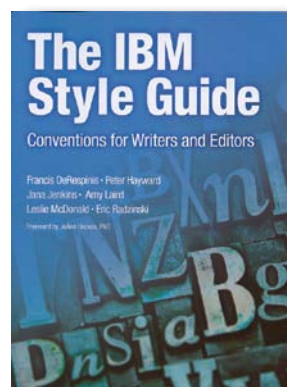
The year 2012 is a big one for style guides. Style guide publishing includes the fourth edition of the *Microsoft Manual of Style* (Microsoft Press) and the completely new *The IBM Style Guide: Conventions for Writers and Editors* (IBM Press). By "completely new," I mean to the audience *outside* of IBM. In the "About this publication" section, I learned that the *IBM Style Guide* represents many years of work by IBM's *internal* Style and Word Usage Council. This group of individuals is responsible for managing the IBM Style and Word Usage guidelines and "supporting their colleagues in creating and producing the highest quality information possible for IBM clients around the world" (p. xxi).

The *IBM Style Guide* is divided logically into ten main chapters, covering everything you would expect in a style guide, including "big topics" such as language and grammar, punctuation, and numbers and measurements. Examples are easy to identify by being in light gray boxes, and include both correct and incorrect usage.

One of the appendixes, Word Usage, is an 80-page list in alphabetical order of words and terms most relevant to technical writers. What I like about this section is the clever use of icons to divide the terms into three categories: "preferred term," "use with caution," and "do not use." Another notable section is Chapter 8, "Writing for diverse audiences," which includes two important topics to so many technical communicators: accessibility and writing for international audiences.

What differentiates this new style guide from the older, widely used guides and handbooks (examples: *Read Me First! A Style Guide for the Computer Industry*, Third Edition, Prentice Hall, 2009, and *Developing Quality Technical Information: A Handbook for Writers and Editors*, Second Edition, IBM Press, 2004) is

the quality coverage of the Darwin Information Typing Architecture (DITA) in two places: Chapter 4, "Structure," and then in appendix B, "DITA tags for highlighting." And if that is still not enough, some references mention the availability of more detailed information on DITA from the IBM Press book, *DITA Best Practices: A Roadmap for Writing, Editing, and Architecting in DITA* (2011).

It is good to see that the *IBM Style Guide* is available in the current standard formats (paperback, Amazon Kindle, and ebook from IBM Press) and as part of Safari Book Online (typically for organizations or corporations that purchase volume licenses). Yet what I found missing is the mention of a link to a Web site for corrections and feedback.

Is *The IBM Style Guide* going to be my new "go to" book to use as a general style guide? It is really too soon to tell. I'll definitely be keeping it on my desk, and can say I have a favorable impression of the book so far.

David Kowalsky
David Kowalsky is a technical writer for NEC Corporation of America. He received his MA in East Asian Studies from Washington University (St. Louis) and a certificate of technical writing and editing from the University of Washington. He is a senior member of STC's Puget Sound Chapter.

The Complete Idiot's Guide to HTML5 and CSS3
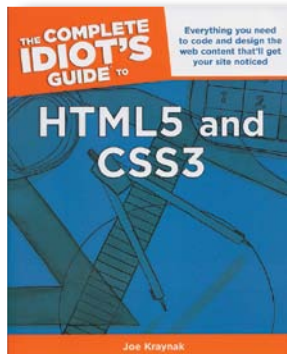
The first thing that *The Complete Idiot's Guide to HTML5 and CSS3* tells you is that Joe Kraynak assumes you have no prior experience with designing Web pages. So for people like me who have created Web sites for years, this book may seem elementary. I did find that the book did provide a good review of many concepts I'd forgotten about, such as basic HTML tags, the steps involved in getting a picture ready to post online, and a brief introduction to image maps, which I've struggled with previously. In addition, it does explain in good detail the process of finding a place to host your site, whether you want a free or pay site, and whether you want to create the site yourself or use a content management system to do some of the HTML for you.

Kraynak devotes several pages to discussing WordPress, my favorite CMS. He even mentioned a few WordPress plugins I hadn't heard of, ones that turned out to be useful for a WordPress site I maintain.

Two new HTML5 tags—video and audio—are obviously used for adding video and audio clips to a Web site. Kraynak describes them in detail in Chapter 8.

Tables is a topic that the author discussed in another chapter. As a Web designer, I had thought tables were obsolete among Web designers in favor of the div (or division) tag for displaying text in columns, but apparently not. It appears that tables are still an excellent way for describing how to display text in a table-type format.

About halfway through *Complete Idiot's Guide to HTML5 and CSS*, CSS is first mentioned with a description of CSS basics before moving on to more advanced CSS topics. I felt this was a good review and would help a novice understand why they are important. Several of the book's chapters are devoted to CSS properties and their descriptions. Everything from making your text look nice, to what colors do you want (adjusting the hue, saturation, and value), making your lists and margins look good, to how you want your page laid out. There's even a chapter devoted to more advanced CSS, once you're ready to take that step.

Kraynak finishes off with tips about how to ensure a high ranking on search engines, which clearly is important if you want to make sure your site is seen by many people.

The *Complete Idiot's Guide to HTML5 and CSS* may be a book intended for beginners, yet it's one that more advanced site designers will also enjoy.

Todd Hawley
Todd Hawley has been a technical writer in the San Francisco Bay Area for more than 15 years and is currently the Webmaster for STC Silicon Valley. He enjoys reading books related to technical communication, Web publishing and information security.

New Directions in Information Behaviour

Amanda Spink and Jannica Heinström, Eds. 2011. Cambridge, MA: Emerald Group Publishing. [ISBN 978-1-78052-170-1. 320 pages, including index. US$124.95.]
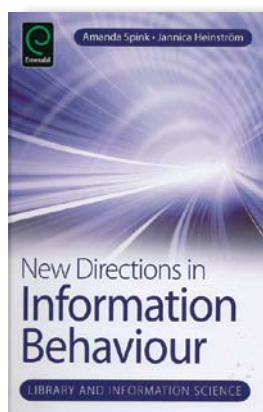
"Information behavior" might seem a strange term to technical communicators, especially when understood to refer to how people respond to information rather than how information acts in a system. As a discipline, information behavior research dates to the 1970s when it was most closely associated with human-computer interface research. Now, it is a broader field, although, in their conclusion (Chapter 12), Spink and Heinström urge broadening the research even more to include evolutionary and developmental sciences.

This collection of 12 original papers reviews the extensive research literature available in this field. Yet, the essays are not strictly literature reviews because the authors present their own work as a basis for explaining different facets of the field.

The editors announce (p. xvii) that information behavior examines "complex human information-related processes that are embedded within an individual's everyday social and life processes." Thus, the anthology is important because the research is "critical to the development of new approaches to the design of Web and information retrieval (IR) systems" (p. xvii And that is why information behavior is important for technical communicators—especially as a supplement to information architect guides such as Rosenfeld and Morville's.

After an introductory section, the editors divide the essays into five sections: Research History and Overview, Psychological Dimensions, Contextual Dimensions, Emerging Dimensions, and Conclusions and Further Research. A section of author biographies and index complete the book.

Technical communicators will find plenty of interesting material that adds to their understanding of user analysis. Generally, though, the approach is quite broad, as reflected by the point that information behavior research usually comes from Information and Library Science programs and is aimed at a general public. That does not mean that little in the book is relevant. For example, Burnett and Jaegar's "The Theory of Information Worlds and Information Behaviour" offers a comparison between the world views of Jürgen Habermas' large social structure worlds and Elfreda Chatman's smallest social units. How do information users in each behave toward information? Web designers could benefit.

I was disappointed in the collection for a number of reasons. For example, the proofreading and editing left much to be desired. Evidently, each set of authors was responsible for both editing and proofing their contributions, which resulted in an uneven set of essays. The style guide, if one were used, was decidedly British English, but that does not excuse missing apostrophes to indicate possession and typos such as "board" for "broad." Also, no one really defined what information is and who creates it. Is the material really data that the user converts to information? The authors seem to think that the conversion has already happened and that the users are converting information to knowledge.

Ultimately, though, I would recommend the book for library purchase. Otherwise, it would be a good edition to your professional library if you are contemplating working in information and library science.

Tom Warren

Tom Warren is an STC Fellow, Jay R. Gould Award for Excellence recipient, and professor emeritus of English (technical writing) at Oklahoma State University, where he established the BA, MA, and PhD technical writing programs. Past president of INTECOM, he serves as guest professor at the University of Paderborn, Germany.

Documents, Presentations, and Workbooks: Using Microsoft Office to Create Content That Gets Noticed

Stephanie Krieger. 2011. Sebastopol, CA: O'Reilly Media. [ISBN 978-0-7356-5199-9. 836 pages, including index. US$54.99 (softcover).]
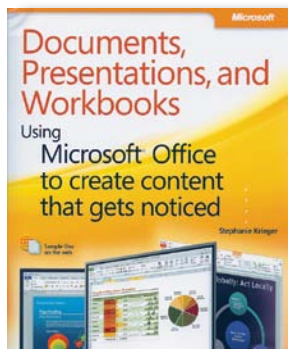
We all think we know how to use Microsoft Office, but Stephanie Krieger's book will help make your documents get noticed. She based *Documents, Presentations, and Workbooks* on the software versions: Office 2010 and Office for Mac 2011. This book is a hands-on guide that provides constructive advice and advanced timesaving tips to produce compelling content that delivers not only dynamic documents in print, but for on screen as well. The layout and clean design makes locating information fast and easy.

I liked the way Krieger made this book accessible to all levels of understanding for people who use Microsoft Office programs. The easy access to information and the simple, clear, and precise steps and information make it worth being added to your collection. In Chapter 4, Krieger says that learning core concepts of Microsoft Word, PowerPoint, and Excel can help you get more from these programs and create incredible documents, presentations, and workbooks. The book's size, although bulky, shows you how to make the most out of your programs and advance your potential to customize and increase knowledgeably into the workings of Microsoft Office. The graphics and screenshots provided make it easy to follow and to follow your progress through the development of your Word document or PowerPoint presentation.

The Table of Contents is clearly defined and easy to find information at a glance. Krieger has broken down the programs used into parts and then chapters. For example, you would go to Part V: Templates, Automation, and Customization to learn about making templates. Each chapter's crispness is refreshing and provides interesting and thorough information, tips, and tutorials. Krieger introduces all the programs at the beginning of each chapter, then breaks down the use of

tools within the program, and how to use the tools to their best advantage to get the most out of the programs.

Krieger says that when it comes to determining where a document should live, consider not just whether you can accomplish the task, but also what will be the best tool. I would go as far as saying *Documents, Presentations, and Workbooks* is a life preserver in ease of use, relevant information, and practical applications.

Julie Hazmoon Kawano

Julie Hazmoon Kawano has a BA in Media Studies. She spent three years teaching English to Japanese students in Japan. Now back in Australia, Julie spends her spare time reading books, doing Web-based reviews, and she is planning to run for local government in 2012.

Dancing with Digital Natives: Staying in Step with the Generation That's Transforming the Way Business Is Done

Michelle Manafy and Heidi Gautschi, eds. 2011. Medford, NJ: Information Today, Inc. [ISBN: 978-0-910965-87-3. 394 pages, including index. US$27.95.]
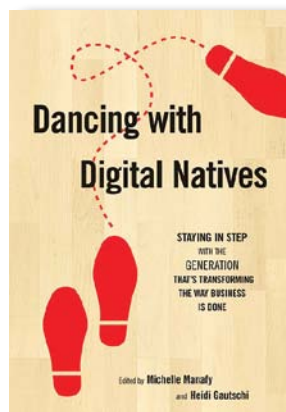
Experts from business and academia provide insight in this book on the digital natives who are those immersed in digital technology from birth and now always connected and socially networked. Each article provides great food for thought on topics including how these digital natives work, learn, shop, and play. The goal of *Dancing with Digital Natives* is to "make the most of these interactions" (p. xiv) and create environments where everyone wins as these individuals increasingly begin to dominate business and society.

In one analysis of how digital natives work, an article in the book explains how digital native police officers can use technologies in various ways on the job. While each technology can have its own drawbacks,

in some cases, police officers can effectively use mobile technologies to get information and complete useful research from either a car or a work site, not having to wait to return to the office. Another example of technology use by a digital native police officer is how "years ago it would have taken months for a new officer to acquire. . .knowledge about a street gang. . . . Nowadays, that officer need only run a Google search" (p. 69).

Concerning how this generation does business, one of the articles proposes that "this generation has developed a distinctly different mindset. . . .This distinct world view will shape the way this generation decides with which companies to do business" (p. 175). With cyberspace being a big part of their lives, their shopping will depend partly on which businesses are online. Social media will also impact their shopping, where postings, for example, of negative statements about certain companies could influence the digital native.

The article, "Making the Grade: Standards and Promoting Achievement Through Technology", in this book is about education and this generation. It is easy to argue that today's students need more than traditional literacy. They need to learn analytical skills to deal with digital media and information and achieve literacy in this realm. In addition, teachers can use techniques such as a wiki to teach about writing effectively and providing feedback on drafts.

Jeanette Evans

Jeanette Evans has more than 15 years in the field. An STC Associate Fellow, she is active in the NEO STC chapter where she serves as academic relations co-chair and newsletter co-editor. She has published in *Intercom* and presented at various STC functions including several national conferences.

ProBlogger's Guide to Blogging for Your Business
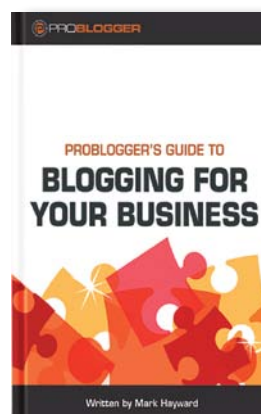
Mark Hayward's book *ProBlogger's Guide to Blogging for Your Business* is a must-read for technical communicators—whether you're considering or actively blogging for yourself, your department, your product, or the company for which you work.

I'll admit, I'm a big follower of ProBlogger, and have purchased each of the brand's books since I read the review of Darren Rowse and Chris Garrett's first ProBlogger publication, *Secrets for Blogging Your Way to a Six-Figure Income, First Edition*, in this journal two years ago. And while all his titles are worthwhile, the *ProBlogger's Guide* really focuses on the basics a technical communicator needs to know to effectively step into the world of blogging and social media. For those who have been blogging for years, it serves as a great basis for evaluating and refocusing your efforts.

Each chapter includes a tutorial that practically holds your hand through the process. Hayward even provides common examples to get your thoughts started. Whether he directs you to consider your reasons for blogging (pp. 18–19), define your target audience (p. 23), or create an editorial calendar and draft a post (pp. 76–77), he gives you a solid foundation to begin taking action right away.

Besides suggestions for plugins to install, methods for evaluating your return on investment, and a year's worth of weekly blog topics (pp. 83–86), you will find solid, usable information. I'd be surprised if you don't find at least one nugget that lets you recoup the value of the book's purchase price. (And I'd love to pick your brain!)

Hayward provides the perfect balance between current technology (known as the platform du jour) and basics, creating a book that will resonate for many years. Even if the interfaces of WordPress, YouTube, or other social media platforms change, readers will know what

they need to do and the steps they need to consider. His recommendations for finding readers and traffic for your blog in Chapter 10 are timeless and can be revisited repeatedly.

My only complaint, which is really minor, with this ebook is that it is available only as a PDF download. This causes the need for extra steps for note-taking, highlighting, bookmarking, or social sharing from mobile devices. And while I certainly understand the business thought behind the presentation format and enjoy the reasonable price, my delight with *ProBlogger's Guide to Blogging for Your Business* would be increased were it available in iBook or mobi formats as well.

ProBlogger is definitely a trusted brand that has helped thousands over the years with outstanding content. Whatever your motivation for blogging, you're sure to enjoy this information-packed resource and find that it is worth the $49.99 investment. And even if you don't take my word for it, they have a 30-day money back guarantee!

Louellen Coker

Louellen S. Coker has more than 15 years in public relations, marketing, Web and instructional design, and technical writing/editing. She has an MA in Professional and Technical Communication, is founder of Content Solutions, STC Associate Fellow, and past Lone Star Community president. She conducts workshops about effective use of social media and portfolios.

100 Things Every Designer Needs to Know about People

Susan Weinschenk, PhD. 2011. Berkeley, CA: New Riders. [ISBN 978-0-321-76753-0. 244 pages, including index. US$29.99 (softcover).]
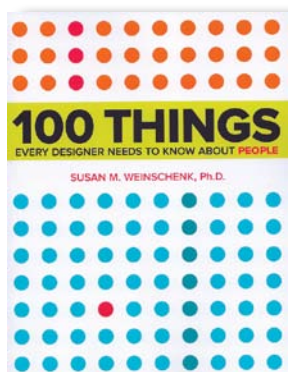
100 Things Every Designer Needs to Know about People includes one hundred facts about how people see, interpret, and interact with the world. These facts are broken into individual chapters that are grouped into different categories, resulting in these sections: How People See; How People Read; How People Remember; How People Think; How People Focus Their Attention; What Motivates People; People Are Social Animals; How People Feel; People Make Mistakes; and How People Decide. The author covers each individual point in two to three pages and includes a description of how this information should inform design.

Weinschenk draws from many research areas to make her points and often cites external sources, encouraging readers to seek out additional information. This book is a fast read and one that should find a home on your office shelf for the foreseeable future as the advice seems sound and the organization is intuitive to reference a relevant topic later. The colorful formatting is a refreshing change of pace that makes it easy to find the most important bits of information. The flagging of external resources is particularly effective because it allows Weinschenk to open the door to an area of concern, offer up additional resources, and still maintain the book's quick-point flow. The Takeaways sections are effective at driving home each chapter's key concepts as they should be applied to a design project and prompting readers to consider how their projects could be affected by this situation.

While chapters are short, the topics are not shortchanged. Weinschenk provides enough information to get het point across, while maintaining the book's faster flow format. While many of Weinschenk's points may seem to be common sense, she quickly demonstrates why a designer needs to be aware of the fact, as well as how one can accommodate people's natural instincts when designing. She does an excellent job of breaking down the different aspects of human behavior and perspective, and applying those to a user-centered design focus. Weinschenk's advice brings a truly human quality to the process of design. It is no longer about understanding the consumer of a product; it is about understanding the consumer as a human.

100 Things Every Designer Needs to Know about People is a work that could easily become a staple for young or new designers. It could also be very complimentary in an undergraduate Web or document design course. However, this book should not be restricted to the youth of technical communication. Weinschenk's topics span the range of the human experience and likely include design questions that even the most experienced designer has not considered. This book has the potential of prompting a reader to walk away with a different, more holistic perspective of

design, and could easily spur new research topics in how some of these human impulses impacts the work and goals of technical communication.

Sandra Wheeler
Sandra Wheeler is an STC student member of and is pursuing her MA in Technical Communication at Texas Tech University. Her primary interests are document/visual design and new media.

Search Analytics for Your Site: Conversations with Your Customers

Louis Rosenfeld. 2011. Brooklyn, NY: Rosenfeld Media. [ISBN 978-1-933820-20-0. 224 pages, including index. US$39.00 (softcover).]

Do you have a Web site? Do you offer a search function? Are you collecting analytics on the search? If you answered "yes" to the first two questions and "no" to the last one, continue reading. For the rest of you, this review is optional! Targeted to user experience professionals (content strategy, information architecture, design strategy, or usability), *Search Analytics for Your Site* provides you with the tools to improve your search.

Even if the word "analytics" scares you—Louis Rosenfeld provides step-by-step techniques for understanding what your customers are looking for on your site and how to make your site search more effective for your customer groups.

So why employ site search analytics (SSA)? "SSA will help you understand how people entered searches, where they were when they entered them, and how they interpreted the results" (p. 22). Rosenfeld also explains how SSA helps with navigation patterns and metadata, as well as content strategy. Wouldn't you like to better understand why people might leave your site after one search? Does it mean that you are missing something?

The book is arranged logically, starting with an introduction to site search analysis. The next five chapters cover different analysis techniques and the last four chapters cover tips for improving your site (based on the analysis described in the previous chapters), as well providing a bridge between search analytics and improving the overall user experience of your site and your search.

The analysis chapters include many examples and easy-to-follow graphics and tables. Each analysis technique can help you solve a particular problem (p. 23):

- *Pattern analysis*: What patterns emerge when you "play" with the data?
- *Failure analysis*: When your search returns no results or poor results, what can we do to fix the problem?
- *Session analysis*: What happens during a specific search session?
- *Audience analysis:* How might we use the tools to uncover the difference between audience segments?

One thing I really like about *Search Analytics for Your Site* is the fact that it is not all about analysis—it is about solutions. One key chapter is Chapter 8: Practical Tips for Improving Search. As a frequent searcher for information on the Web, it occurs to me that many sites with their own search engines could do well to note some of these suggestions.

One thing I like about the Rosenfeld books is that each published book has an associated Web site. The site for this one includes the most current presentation that Rosenfeld has made about site search analytics.

Still reading? If this sounds like a set of tools that you could use to help your site, Rosenfeld also includes tips for selling the concept of the analysis. . . . It's a complete package that I highly recommend you purchase.

Elisa Miller
Elisa Miller, an STC Associate Fellow, is a Senior User Experience Engineer for GE Healthcare. She is a past president of the Lone Star Community and is an active member of the STC Usability & User Experience SIG.

Handbook of Technical Writing

Gerald J. Alred, Charles T Brusaw, and Walter E Oliu. 2012. 10th ed. New York, NY: St. Martin's Press. [ISBN 978-1-250-0441-3. 650 pages, including index. US$47.99.]
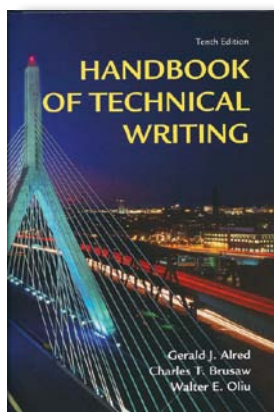
This book's latest edition shows how this reference, which has been around for almost thirty years now, continues to be an important resource for all technical writers. I've always considered *The Handbook of Technical Writing* to be the technical writer's "Swiss army knife," because it's a collection of many important topics for writers. This tenth edition includes updated information on topics such as using PDFs, Wikis, FAQs, and blogs. The authors have also updated the documenting sources section (which I've always liked), whether they're print or online.

Alred, Brusaw, and Oliu discuss many grammatical and punctuation issues, yet this is not a grammar book. It discusses many writing style tips, but it isn't strictly a style guide either. There are definitions of some terms, along with similar sounding words, but it's not a dictionary either. It is also not specifically about technical writing topics. It also covers grant writing, white papers, proposals and other types of formal reports, items that writers may create depending on their job duties.

I enjoyed the book's "Web links," which are URLs describing helpful Web sites related to the just described topic, that are sprinkled in small boxes throughout the chapters. Another feature I found helpful were the "Writer's Checklist" I found after various topics as well. The checklists call attention to important points not covered previously.

All entries are in alphabetical order as always and there's a handy contents by topic at the book's beginning when you want to refer quickly to a topic. The entries that are more detailed (such as formal reports, different types of letters and memos) will give examples of how they should be written. Some of the more detailed entries contain their own small "table of contents," so you can directly go to a mini-topic inside the bigger

one. Figures are also used throughout the book to great advantage to further explain certain topics.

The Handbook of Technical Writing also touches on some non-writing topics that are of importance to writers, like looking for and applying for a job, how to conduct a presentation and/or meeting, and the best way to display mathematical equations (something that likely has vexed many a writer).

The book's back-end matter includes a two-page "Model Documents and Figures by Topic" section. This allows the reader to refer quickly to a visual example of a document or figure, a feature that most writers will find quite helpful.

The Handbook of Technical Writing has so many wonderful features that cannot be adequately described in a short review like this. I do recommend this book to any writer wishing to learn more about the real art of technical writing.

Todd Hawley

Todd Hawley has been a technical writer in the San Francisco Bay Area for more than 15 years and is currently the Webmaster for STC Silicon Valley. He enjoys reading books related to technical communication, Web publishing and information security.

Culture, Communication and Cyberspace: Rethinking Technical Communication for International Online Environments

Kirk St.Amant and Filipp Sapienza, Eds. 2011. Amityville, NY: Baywood Publishing Company, Inc.. [ISBN 978-0-89503-398-7. 258 pages, including index. $54.95 USD.]
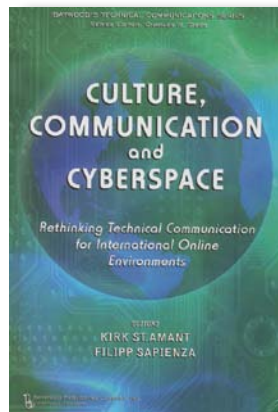
Culture, Communication and Cyberspace is a collection of ten scholarly essays divided into three sections: theoretical approaches to online technical communication, online cross-cultural interactions, and cross-cultural collaborations, especially in an educational context. Contributors include STC

award winners, university professors in the US and Taiwan, and PhD students. Because of the contributions from Taiwan universities, most of the research presented involves interactions with Asia, in particular China. The exception is one experiment in Kenya for developing better AIDS prevention materials.

Having graduated college a while ago, I found myself back in study mode, annotating sections as if I had to write a class paper. Students are also likely the intended audience for this book. For them, there is lots of interesting information and suggestions on where further research is needed, potentially topics for readers' dissertations. Others parties will find intriguing nuggets of information, such as "The average information system user, in English-speaking locales, spends fewer than 10 seconds browsing the results of a retrieval algorithm" (p. 75) It would be interesting to see such a statistic for other languages. Do people from other cultures spend more time looking at search results before moving on? Are there differences in attention span between different English-speaking locales, such as South Africa and Canada?

Not surprisingly, *Culture, Communication and Cyberspace* is less useful for practicing technical communicators. Few chapters offer advice on real-world application of the research presented, although awareness of the issues studied—such as the way in which cultural factors affect online communication between Asian and North American writers—is certainly helpful. After all, even if our colleagues elsewhere in the world communicate with us in English, or our international readers peruse an English-language Web site, they still apply their own cultural assumptions to those activities. Knowing that fact may help US-based technical communicators design Web sites and help systems that are better adapted to such cultural differences.

However, I am not sure that this awareness couldn't also be gained from reading a couple of online articles, rather than an entire book of academic essays. So if you are a student or an educator, or are simply interested in the theory of international communication, this may be a good read for you. But if you are looking for practical advice on designing an international Web site or communicating with your international team, you may be better served by more practice-oriented publications.

Barbara Jungwirth
After majoring in Media Studies, Barbara managed an IT department and wrote software documentation. She now translates technical, legal and business documents from German into English for her own company, reliable translations llc (www.reliable-translations.com). Barbara also writes a blog, On Language and Translation (http://reliable-translations.blogspot.com/), and tweets (@reliabletran).

Best Practices Are Stupid: 40 Ways to Out-Innovate the Competition
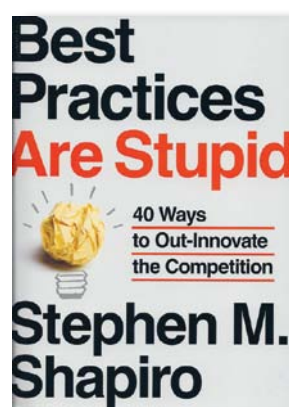
Imagine you are asked to contribute ideas to out-innovate your company's competition. What approach would you consider taking?

Wanting to always help my company stay ahead of its competition, I eagerly thumbed through the table of contents of Stephen Shapiro's *Best Practices Are Stupid*. I envisioned seeing such tips as thinking outside the box, as that is a commonly used phrase. But, what caught my eye was Shapiro's tip to consider hiring people you don't like, and he also suggests "not" thinking outside the box! I was so curious to learn Shapiro's viewpoint on this that I requested to review his book and find out for myself the advantage of taking this advice.

In his book, Shapiro shares his 40 tips by sorting them into categories, such as overview, process, strategy, measures, people, and creativity. Since each tip stands on its own, you can read the tips in any order.

One of Shapiro's tips is Tip 7: The Goldilocks Principle. Recalling the story of Goldilocks, she was tired after her walk in the woods and sampling the porridge the bears left behind on the table. So, she decided to try their beds. Papa's bed was too hard, Mama's bed was too soft, but she found baby bear's bed just right. Using the bed analogy, Shapiro points out that when addressing challenges, you must not be broad and abstract nor must you be overly specific. However, if you ask specific questions, you will arrive at the best solution. He illustrates by using a study of

a cell phone company wanting to improve customer service. A typical approach would be to ask customers how their experience could be improved, which might be considered being too broad. However, in this case, the company studied the call data and determined there were ten top reasons people called customer service. One of the most common was about a specific billing issue. When the company changed the tariffs associated with the issue, customer calls dropped in number. Therefore, challenges are best addressed when they are not too big (abstract) or too small (overly specific), but when they are just right.

Have you ever wondered what your innovation style is? Shapiro includes a chart in Appendix B that you can use to rate yourself on 40 characteristics, such as realistic, loyal, and curious. He recommends your team should include people who represent each of the four innovation styles that he defines.

I suggest you purchase Shapiro's Best Practices are Stupid to learn for yourself why you should consider hiring people you don't like. There is a distinct advantage to doing so. And remember, don't think outside the box; find a "better" box. You're likely to observe your team out-innovating the competition!

Rhonda Lunemann
Rhonda Lunemann is a senior technical writer with Siemens PLM Software, a senior member and Treasurer of STC's Twin Cities Chapter, and a member and officer of the Hill Speakers Toastmasters Club (Club 4415).

The Copyright Handbook: What Every Writer Needs to Know

Stephen Fishman, JD. 2011. 11th ed. Berkeley, CA: Nolo. [ISBN 978-1-4133-1617-9. 428 pages, including index and CD. US$49.99 (softcover).]
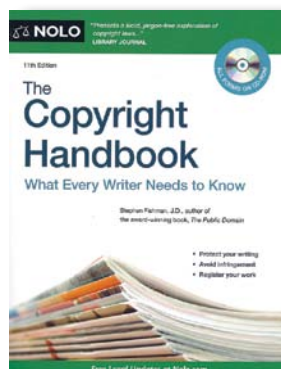
Readers come to a book on copyright for many reasons, but my guess is that the two main reasons would be to find out how to protect one's own intellectual property and to learn how to legally reuse others' property. If you've always wondered whether it's okay to photocopy material for your own use or for a class, you will get your answer here. If you want to know whether something you wrote is eligible for copyright protection, look inside this work. If you wish to register a copyright for your own works, Fishman's book tells you how.

Fishman lays out the scope of this work in the introduction: "… [T]his book is about: copyright for the written word" (p. 1). If you want to know how to protect your software, your music, your films, your video games, look elsewhere. Fishman probably has another book that covers those media.

Chapters 1–3 walk us through basic copyright information: Copyright Basics, Copyright Notice, and Copyright Registration. They are suitable reading for the person who needs an introduction to the most fundamental copyright concepts. The remainder of the work, Chapters 4–15, covers more specific topics: Correcting or Changing Copyright Notice or Registration, What Copyright Protects, Adaptations and Compilations, Initial Copyright Ownership, Transferring Copyright Ownership, Copyright Duration, Using Other Authors' Words, Copyright Infringement, International Copyright Protection, Copyright and Taxation, Obtaining Copyright Permission, and Help Beyond This Book. The accompanying CD contains ten useful forms plus four relevant legal documents. Information on the book's Web site mostly duplicates the material on the CD, but it also presents (at the time I looked) a video about applying for photo copyrights, obviously beyond the scope of this book, which treats only the written word.

The single appendix discusses how to use the forms on the CD, and the book contains a useful index.

Interestingly, Fishman, a lawyer himself, is careful not to assert too definitely some of his opinions concerning what would be considered legal use of others' property. Since fair use is a defense against a charge of copyright infringement, each case brings its own particular issues. Only a court can affirm fair use; the defendant in a copyright case can merely assert it, substantiate its invocation, and present evidence. Ultimately, a copyright infringement case will be adjudicated based on the facts of the specific case, and a ruling will ensue.

Myths about copyright abound, and Fishman very clearly exposes and debunks them. Fictitious case studies make the details of copyright come alive. Fishman also gives examples of actual cases, presenting the facts of the case and how the court ruled. These case studies can give readers a good feel for the kinds of issues that need to be considered. The rest of *The Copyright Handbook* offers guidance on how to address them.

Karen Lane

Karen Lane is a freelance technical editor, indexer, and coauthor of a technical communication textbook, *Technical Communication: Strategies for College and the Workplace*. She is an STC Fellow and has served on several Society-level committees, as well as serving as Program Manager for the 2008 STC Technical Communication Summit.

The Information: A History, A Theory, A Flood

In *The Information,* James Gleick, twice a Pulitzer Prize and National Book Award finalist, draws together threads from history, biography, and science to tell the long, many-faceted, story of how we arrived at the modern age, where information has become "the blood, the fuel, the vital principle of our world" (inside left dust cover).

Gleick opens at a pivotal moment, 1948 at Bell Labs. The Labs have just invented the transistor, which will revolutionize the hardware side of electronic communication. But, as Gleick tells it, the more significant event is the publication of Claude Shannon's paper, "A Mathematical Theory of Communication." While complex, and mathematically dense, Shannon's paper effectively launched the field of information theory, and soon became a "fulcrum around which the world began to turn" (p. 4).

Shannon viewed the essential problem of communication as that of accurately reproducing at one point a message selected from another point. While messages may have meaning, this is irrelevant to the engineering problem. For Shannon, a message was a sequence of information units, binary digits, which he called "bits" (pp. 9–10).

While information theory revolutionized electronic communication, it also profoundly affected other fields. It appears that something very like Shannon's bits are the universe's building blocks. Biologists found that DNA was a code, a message to be replicated; physicists found that subatomic "qubits" communicate their binary states to each other. In the words of one physicist: "It from Bit" (p. 10). The universe is bits all the way down.

Having set an anchor near the present, Gleick returns to the past. In retrospect, it is clear that man had been wrestling with the problems of communicating across distance for a long time. Gleick provides a

richly detailed account of this back story. He traces a development path that runs through African drums, various line-of-sight signaling schemes, the telegraph, the telephone, and on to the high-tech wonders of the modern age.

Yet hardware technology is only part of the story. Information requires encoding, and that required the development of alphabets, and alphabet substitutes like Morse code. Communicating across distance brought security and privacy concerns, which led to developments in cryptography. Distance also produced problems of signal loss, noise, and message degradation, which had to be overcome. As the amount of information increased, it brought problems of how to understand and cope with the flood; hence a need for dictionaries, encyclopedias, and indexing, storage, and retrieval technologies.

Where possible, Gleick gives the narrative a human face by telling the stories of the individuals involved. Thus we learn of the inventor of an optical telegraph, of a schoolmaster who made the first English dictionary, of Charles Babbage who attempted to build a mechanical calculator, of Ada Byron, daughter of the poet, who worked with Babbage and became the world's first computer programmer, and many others.

It's an important story, well told. Science writing doesn't get much better than this.

Patrick Lufkin

Patrick Lufkin is an STC Associate Fellow with experience in computer documentation, newsletter production, and public relations. He reads widely in science, history, and current affairs, as well as on writing and editing. He chairs the Gordon Scholarship for technical communication and co-chairs the Northern California technical communication competition.

ConcreteLoop.com Presents: Angel's Laws of Blogging: What You Need to Know if You Want to Have a Successful and Profitable Blog

Angel Laws with Carol Moore. 2011. New York, NY: Skyhorse Publishing. [ISBN 978-1-61608-268-0. 148 pages. US$14.95 (softcover).]
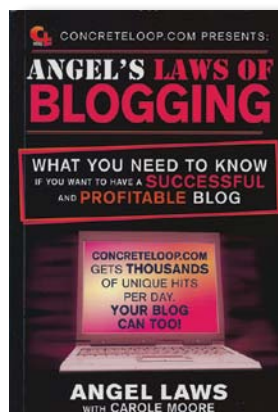
ConcreteLoop.com Presents: Angel's Laws of Blogging tells you how to develop and maintain a successful blog. Angel Laws is a self-taught blogger who runs ConcreteLoop.com, a blog focused on black entertainers. In her book, Laws describes how she got into blogging, the mistakes she's made over the years, and how ConcreteLoop.com became successful and profitable.

The first chapter describes how to pick a blog topic. It's not enough to be passionate about something, you have to give things a distinctive twist. You then see how to choose a blog name, learn about search engine optimization and how to pick a platform for your blog, and define your blog's demographic. Subsequent chapters talk about how to get ads, branding your blog, working with social networks for greater publicity, and liability. There are also chapters on dealing with celebrities and throwing press parties. The book concludes with an excellent summary of the chapters and what you should take away from each one.

ConcreteLoop.com Presents: Angel's Laws of Blogging does not go into detail about any one thing. Instead, it presents enough topical information so that you have a vocabulary of concepts and can find out more about them yourself. The book covers a lot of ground, so it may not be a quick read, but you'll definitely finish with a general idea of what to do and how to do it.

I was impressed with the book's production values such as good page layout with insets of meaningful tips. It's nice to see a technical book that uses color well and is printed on heavy paper. Thumbing through it at first, I also really enjoyed the author's attitude: she starts by asking "What would you write about if there was no

money in it?" Laws returns to this idea throughout the book. She also hammers away at the idea of making money with your blog. She talks in every chapter about how doing something fits into getting advertisers and bringing in a greater readership. All the advice dovetails with her three main points: you must always be organized, be consistent, and be motivated.

There are a few shortcomings. The text needs more editing. For example, one of the chapter titles is "Grab a Subject and Angle It!" ~shudder~ This book is written in a very casual style that the typical reader should find very approachable, but there is occasional slanginess that I found a little jarring in a technical book. Although the book is short, it had no index. Having an index would have been nice given the material's technical nature.

Technical communicators can benefit from knowing more about self-promotion. If you're interested in blogging as part of your own PR program, *ConcreteLoop.com Presents: Angel's Laws of Blogging* is a good place to start.

John Hedtke
John Hedtke has been a technical communicator for many years. He has published 26 books and close to 200 magazine articles. John is an STC Fellow, a member of the STC Willamette Valley Chapter, and several SIGs, and has served on the STC's Board of Directors.

Getting Published *in the* Life Sciences
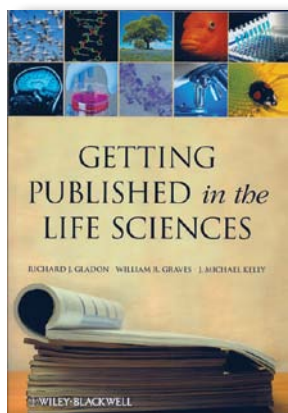
Gladon, Graves, and Kelly's book, *Getting Published* in the *Life Sciences*, has good concepts that will help its market—science students and newly minted researchers—prepare manuscripts for refereed journals. The authors have pulled together the best information from the best-known textbooks on scientific and technical writing, besides offering several useful suggestions of their own. Exercises at the end of each chapter help the reader practice what the authors preach.

They offer a new paradigm to the hallowed IMRAD (Introduction/Materials & methods/Results, And Discussion) formula, for developing—not "presenting"—scientific papers—a formula, they feel, that gets in the way of manuscript development. Instead, the authors propose starting with "two to four take-home messages" (p. 12). These "take-home messages are the central ideas, or pieces of information, you want the reader to understand unequivocally by the time they have finished reading your published article" (p. 75). The other manuscript components include a provisional title that encompasses those messages and concludes with the Results section, which can help writers define and delimit their paper.

Now for the problems—definitions, non-use of itemizers, and pronoun selection—with *Getting Published* in the *Life Sciences*. Let's discuss them in order. Several major concepts are mentioned, yet not defined until later or not at all. For example: [i] the "take-home message" (first mentioned on page 12, then on page 66, but not defined until page 75); [ii] "système international" (mentioned on pages 14 and 16, but not explained until page 204); and [iii] "impact factor" (mentioned on page 52, but never defined).

The next, more serious problem found throughout the book is that the authors provide a long series of things—especially do's and don't's—often presented in the paragraph, without any itemizers (a, b, c, d). Such points are not very accessible, nor readable when run together like this. The authors could have presented these in separate list form to improve the readability of the content. Darian's rule of thumb: When presenting three or more items—especially procedures—put them in list form (16a, 70, 91). The authors sometimes separate material that is not a procedure (p. 92), which doesn't really need differentiating.

The third major problem—partly a matter of judgment—is the ongoing conundrum of the use him/him his/hers. Another Darian rule of thumb: If it sounds bizarre in speaking, try to avoid it in writing. Since we're pressed for space, I can only cite a few page numbers (12, 14, 15). Plus one example that I need, to rest my case on: a quote from R. L. Stevenson, that the authors have rewritten: "If a man (woman) can group his (her)

ideas, he (she) is a good writer." I hope they weren't serious about this, but I'm afraid they were.

Getting Published in the *Life Sciences* is a good book. Hopefully, these suggestions can make it even better.

Steven Darian

Steven Darian is an STC Fellow, having retired from teaching business and technical writing at Rutgers for 25 years and in eight countries. He was a manager for Raytheon in Saudi Arabia. Steven is coauthoring a forthcoming book, *IMPACT: Writing for Business & the Professions*, with Professor Olga Ilchenko.

Design Matters: An Essential Primer

Maura Keller, Michelle Taute, and Capsule. 2011. Beverly, MA: Rockport Publishers. [ISBN: 978-1-59253-738-9. 448 pages. US$40.00 (softcover)].

Overwhelming is the word I would use to describe *Design Matters: An Essential Primer*. The sheer weight of the book, number of examples, and sort of "in your face" design of each page made me a somewhat timid reader. When I glanced at the table of contents, however, I was pleased to see the three distinct phases of design (planning, creating, and implementing) addressed for brochures, logos, packaging, and portfolios.

The information is priceless as each page addresses a crucial aspect of design and puts that concept in context by referring to and thoroughly explaining a contemporary example from some of the top design and advertising names all over the world. One problem, though, is that the bold and usually up close photos of the examples took over the page, so I had to, basically, force myself to read the text because my eyes were constantly drawn to the adjacent page or to one of the photos.

Generally, color is used as a guide of some sort, but I could not find ways to make sense of the different colored pages throughout the book, which was frustrating. What was the difference between the different colored backgrounds? I couldn't figure it out. I bring this up because the book is so large and filled with

so much good information, but I was too distracted by the design of each page, the larger-than-life examples, and what appeared to be random background colors that the first time through I missed a lot of information because I couldn't focus on the text. I think this is a serious drawback in that I found extremely helpful information throughout the book, but it was only because I made myself read it. If I picked up this book as a designer brainstorming ideas for a product, or especially as a student, I'm not sure how much actual reading I would do. And in order to really understand the design of the examples, it's necessary to do so.

The 50 case studies that conclude the book were easier to get through—the pages had a white background, so that was a most welcome relief. Each case study went through the different stages of design, so it was a nice comprehensive story for each product that was easy to follow and concluded the book.

Diane Martinez

Diane Martinez is a writing specialist for Kaplan University's online Writing Center and a PhD student at Utah State University. Her technical writing experience has been mostly in higher education, engineering, and government contracting. She has been with Kaplan since 2004 and a member of STC since 2005.

How to Be a Graphic Designer, without Losing Your Soul

Adrian Shaughnessy. 2010. New ed. New York, NY: Princeton Architectural Press. [ISBN 978-1-56898-983-9. 176 pages, including index. US$24.95 (softcover).]

Shaughnessy's new edition of his acclaimed 2005 work arrives at a time in fiscal history when even a designer of experience and caliber might find that bowing to client demands, however ethically antithetical, has become a financial necessity. What then of the young designers poised on the edge of a career? How can they maintain artistic and personal integrity in a field dominated by market forces?

By focusing on the "grubby bits" of a designer's life, Shaughnessy provides the novice with straightforward advice about such varied subjects as finding a job, developing pragmatic business skills, embracing socially conscious design, and working with clients without selling one's soul. A friendly, even occasionally self-deprecating, tone; notes that function more like anecdotal sidebars; and ample references to the experiences of known designers permit the reader to accept Shaughnessy as a wiser, if somewhat jaded, mentor.

Shaughnessy's new edition was prompted by the 2008 global financial crisis. He had a glimpse into the ensuing "abyss" which led to a dawning awareness that design needed to become more socially conscious and that designers themselves might need to adapt their skill sets to a field changed daily by globalization, cultural trends, and technological advances. As a result, this version features two new chapters that address those issues.

The first provides advice one might expect to hear from an academic tutor: practice time management, research your subject, plan a strategy, and hone your writing skills. Yet, in the context of the field, they form the core of the real-life skills any successful designer must develop to succeed. Like this chapter, the other new one provides equally pragmatic advice. It examines how a greater emphasis on social awareness, digital media, and global cultural trends is changing the face of design. It has become a fusion of many disciplines, activities, and philosophies, into which the novice designer should be open to delving. Adapting to its needs means not merely loving the act or aesthetics of design, but instead "questioning what we do and who we do it for" (p. 101).

Occasionally, the reader might wish for more concrete, extensive advice—even subsections devoted to dense subjects last at most two pages—but, in general, Shaughnessy provides enough foundational wisdom for young designers willing to listen to a hard lesson. Start thinking not just about design programs or schools of design, but about the sort of designer you will or can be.

Ironically, the least appealing element of Shaughnessy's revision is its new design. Figure-ground often fails due to a muddy gray and blue color scheme; page layouts shift somewhat randomly in style, evoking not dynamic design but lack of continuity; and some of the visual offerings—such as the cover of Daniel Halpern's *The Art of the Tale*—are so poorly reproduced you will be tempted to pull out your iPad to Google the originals.

Despite its less-than-appealing presentation, Shaughnessy's text succeeds in its simple, straightforward, and even kindly advice to young designers.

Jennifer Mooney

Jen Mooney (PhD, UK) teaches at Virginia Tech in the fields of professional writing, document design, Victorian literature, and women's literature. Since Spring 2010, she has served as the Assistant Director of the Professional Writing Program in the Department of English. She is a new STC member.

Learning Author-it Version 5

Char James-Tanny. Laguna Hills, CA: XML Press [ISBN 978-0-9822191-8-8. 378 pages, including index. US$39.95 (softcover).]
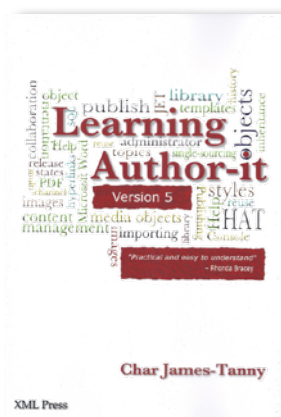
Learning Author-it Version 5 is a great resource for anyone learning Author-it or needing a refresher to increase their efficiency. James-Tanny provides an in-depth look at Author-it, easing the steep curve on learning how libraries work, how to understand the object-oriented structure, how to work with content, and how to publish your output.

The book starts out with conventions and standards, so you clearly understand the typographical conventions used and the standards applied, as well as what is and is not covered within the Author-it environment. James-Tanny covers only Author-it and Author-it Administrator, and does not cover any modules or the importer, presentations, or version control within the software.

The first section covers creating and setting up a library with Author-it Administrator. If the Author-it library and environment is already set up and you just need to know how to use Author-it, the "Understanding the Authoring Environment" section is a good place to start. This section covers everything a new user would need to know, including opening a library and logging into Author-it. Once logged in, this section covers using the library explorer, using the ribbons and tabs, and using multiple windows. You can also set the user

options, the user details tab, and the structure for your publishing folder in the publishing tab.

The biggest section in the book, "Creating Content," covers a lot of ground. First, you'll go through creating objects and understanding templates. Once you've learned those concepts, you are guided into working with topic objects, hyperlinks, and images, as well as creating an index and adding a glossary.

Once you've created content, the rest of the book shows how to reuse content, organize objects, and publish your output.

Learning Author-it is a good book to take you step-by-step through the process of learning the ins and outs of Author-it. While the book is aimed at the beginner to intermediate Author-it audience, even advanced users would find useful tips and tricks, especially in the later chapters.

Rachel Houghton

Rachel Houghton is a Senior Information Designer at Sage, a leading-edge construction productivity and real estate solutions company. She has more than 14 years of technical communication experience. Rachel is the outgoing STC Secretary and is actively involved in the STC Willamette Valley community. She enjoys photography and Photoshop.

Cultural Identity and New Communication Technologies: Political, Ethnic and Ideological Implications

D. Ndirangu Wachanga. 2011. Hershey, PA: Information Science Reference. [ISBN 978-1-60960-591-9. 399 pages, including index. US$180.00 (ebook).]
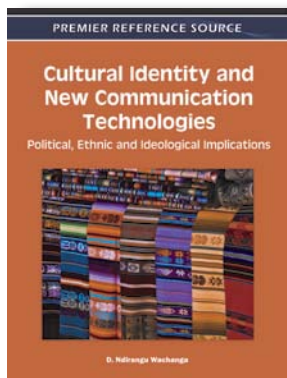
Media bring with them original and often unexpected means of accessing and sharing information. The digital nature of many media forms often lets users transcend barriers associated with communication and interact across geographic distances. Wachanga's edited collection *Cultural Identity*

and New Communication Technologies provides technical communicators with examples of and perspectives on the uses of different media across a range of cultures. The chapters provide important perspectives on how aspects of culture, technology, and politics can affect the ways communities adopt, adapt, and use different media to achieve a variety of objectives. The text also provides key insights on regions often overlooked in discussions of media in international contexts.

The section on "Emerging Media, Community, and Identity (Re)Construction" examines how communication technologies are challenging more conventional ideas of identity, ethnicity, gender, government and politics, and the ownership and uses of media itself. Authors from nations like Kenya, Uganda, and Zimbabwe examine different uses of and attitudes toward conventional and newer media in their nations. They reveal how communication technologies can facilitate changes involving attitudes toward and behavior in communities. Such changes can involve understandings of symbols and rituals, perceptions of and participation in political processes, and relationships among individuals and with different organizations. From these chapters readers can understand the power media have to change society and the unexpected ways in which these technologies can shape ideas of community and community relations.

The book's "Emerging Media, Language, Pop Culture, and Health Communication" section extends the examination of media and community to the accessing and sharing information within and among specific groups. The authors examine issues like distributing medical and health information, merging different forms of music, and creating an identity as they relate to different communication practices and technologies. The topics covered provide interesting insights relating to audience perceptions and uses of media to share information with diverse and changing groups.

The final section, "Emerging Media, Global Politics, and Cultural Transformation," extends ideas of media and community by examining the interconnected nature of media and politics. Several entries address issues of power dynamics and how such dynamics influence the conversations in which communities can engage. An interesting theme occurring within this section is how attempts to control media can lead communities to re-think the roles media can play in creating identity and in connecting to others.

Today's world is one of rapid, often jarring change, where media plays a key role. By understanding how communities use, shape, and are shaped by different media forms, technical communicators can better select the mechanisms for sharing information with different groups. While *Cultural Identity and New Media* is not a comprehensive assessment of such factors, Wachanga's collection provides examples you can use when selecting media for sharing information with different audiences.

Kirk St. Amant

Kirk St.Amant teaches technical and professional communication at East Carolina University. His research interests include international and intercultural communication (especially in the online environment) and online communication. He is an STC senior member.

Classic Typefaces:
American Type and Type Designers

Classic Typefaces gives a wonderfully in-depth look at American typeface designers and the major events surrounding the invention of type. Following the Introduction, Consuegra takes a 24-page chronological look at type-related events, starting in the 1600s with the printing of *Don Quixote de la Mancha* in Madrid, Spain. Some of these events, such as the founding of Jamestown, VA in 1607, may seem to be more of a side note in history than directly related to developing type. Yet, Consuegra does a good job of showing what is happening with typefaces in other parts of the world at the same time as these events. I believe that these historical references let the reader situate typeface development into world history more clearly than might be possible without the extra historical references, and Consuegra notes, "The history of type can certainly be seen as part of the history of civilization" (p. ix).

Consuegra proceeds on to give a chronological list of American and European typefaces and their designers, helping to move the reader from world events to the specifics of typeface development.

In the rest of *Classic Typefaces,* Consuegra focuses on individual American typefaces and their designers. For each designer, we see a picture followed by a one-page biography of the designer (including the "why" behind the new typefaces), and a graphical representation of the typeface(s) that they designed. The graphical representation includes upper and lowercase letters (if both were included in the design), the numbers 0–9, and basic punctuation marks (as included in the design). Each typeface is shown in its true form letting readers learn about the subtle differences between the different types. If a designer created more than one typeface, they are all given equal display space, again letting the reader note the subtle differences in letter or number design. When available, advertisements or other real-world uses of the typeface are shown after the alphabet.

The book ends with a short discussion of American type foundries, such as Adobe and Linotype, and a well-detailed glossary of typographical terms. These additions help novice readers to effectively use the book to further their understanding of American typefaces without having to seek outside sources for further information.

Consuegra's *Classic Typefaces* is a wonderful addition to the library of anyone who is seriously interested in the subtle differences in American typefaces or who wants to learn more about American type designers. This book would also be a great reference for anyone hoping to better understand why different typefaces exist and the historical reasons for the differences in design.

Laura Dumin

Laura Dumin is an Assistant Professor and the Director of Technical Writing at the University of Central Oklahoma.

Theories of Learning for the Workplace: Building Blocks for Training and Professional Development Programs

Filip Dochy, David Gijbels, Mien Segers, and Piet Van Den Bossche, Eds. 2011. New York, NY: Routledge. [ISBN 978-0-415-61894-6. 150 pages, including index. US$39.95 (softcover).]
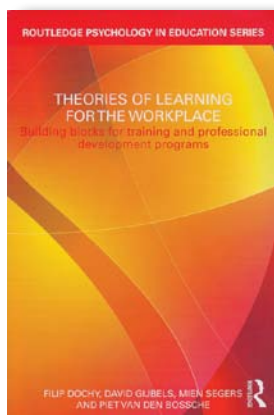
Theories of Learning for the Workplace, edited by Dochy, Gijbels, Segers and Bossche, is a book I loved. If you work with or for learning professionals, you should too. Here's why. First, it's short. Learning professionals can be long-winded. A scant 150 pages of concise learning theory is worth a bucket of gold, or two. Second, this book covers in a digestible way some of the most important and relevant learning theories floating around today.

The book comprises nine chapters, seven that I found enriching and insightful, two not so much. The chapters I found helpful were on deliberate practice, workplace learning, communities of practice, and learning organizations (of the Senge variety).

An issue that learning theory has in general is equivocation where learning theorists have given their systems and models names that disappear in an average organization's nomenclature. Take for instance "workplace learning." Mention this phrase to a senior manager and they'll think you are talking about learning that occurs near where work happens. Try "organizational learning" and "learning organization"—two very different concepts for a learning theorist; a simple word reversal for a project manager.

Why rant about equivocation? As communicators, words are important to us. So while *Theories of Learning for the Workplace* is filled with really useful information about, well, learning theories, as communicators we need to learn how to talk to non-learning professionals about this stuff. I earnestly believe learning theory can have substantial impacts on an organization, yet a serious obstacle is the language we use to convey it.

Another quality that makes this book great, and which communicators can learn from, is the structure of the essays. Each chapter starts with a case study plucked from real practitioners in real workplaces, the case studies are followed by a review of the theory in question, and the chapter is then capped off with an example of the theory in application. In this way, the subject's complexity is softened by bookends of concrete demonstrations. Kudos to the editors for building in a pedagogical architecture that truly helps communicate the content in a user friendly fashion.

The richest, most pragmatic chapter for me is "Systems thinking and building learning organisations: P. Senge" written by authors Dochy, Jan Laurijssn and Eva Kyndt. If you have not encountered Senge, let me sum up by saying "nice theory, now make that happen!" The authors offer a case study where they take Senge's five principles and show how the Wolters Kluwer company is applying them across six stages. What they are not able to offer, unfortunately, are results that quantify the business value of Senge-styled learning organizations. Yet, what they do provide is an implementation roadmap . . . not a bad start.

Gary Hernandez
Gary Hernandez is a communications director for BP. He received his English literature MA from George Mason University and received his technical writing MS from Utah State University. Gary belongs to STC and IABC.

Writing Chemistry Patents and Intellectual Property: A Practice Guide

Francis J. Waller. 2011. Hoboken, NJ: Wiley. [ISBN 978-0-470-49740-1. 238 pages, including index. US$79.95.]
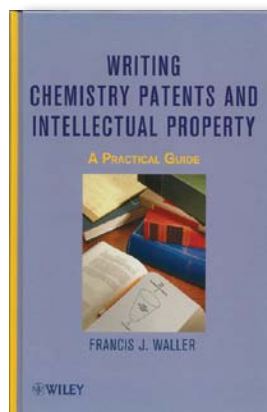
When I graduated with a master's degree in chemistry ten years ago, I knew nothing about intellectual property or anything else about the legal side of science. After joining the local Association for Women in Science (AWIS) chapter, I began to understand the large role that intellectual property and law plays in the vast world of scientific

research. I also discovered a wealth of opportunity for women in the development and approval of patents in science. Much of this opportunity remains hidden at the academic level because of the omission of the field from formal tracks of education in the sciences.

This is one of the main reasons that Francis J. Waller wrote and published this book, *Writing Chemistry Patents and Intellectual Property*. He makes it clear in his narrative that access to information about intellectual property is not readily available. For this reason, The American Chemical Society has had Waller teach a class every year since 2006 on this subject at their national meeting. Because scientists leave their graduate programs without any formal training or knowledge of the subject, Waller attempts to fill this knowledge gap with his all-encompassing, dense, one-stop shop approach in describing his 35-plus years of real-life experience.

Waller's knowledge and the sheer amount of information necessary to convey in a short book make organization a challenge. Overall, the book is logical in its design: a broad overview of intellectual property followed by vocabulary definitions and a discussion of patent versus trade secrets lead into the meat of the book about patents. The chapters become more focused on the individual aspects of a patent—writing it, formatting it, and filing it—the further into the book that you get. Waller has written some of the book strictly for PhD-level chemists who are looking for answers to questions about real patents. There are, however, some helpful chapters written for anyone who has concerns over general intellectual property questions. An example is his discussion of copyright and trademarks in chapter 11, where he discusses the concept of fair use—a topic that is becoming more relevant to all disciplines, especially on the Internet. One improvement Waller could make is to provide a brief mention of critical definitions in the overview chapter. I found myself flipping ahead to the vocabulary section so I could better understand the general overview.

Chapter 7 is most specific to chemists working on actual patents. In his discussion of specific patents, he cites examples that are included in a special appendix. This is where he really dissects each patent of its components and the issues surrounding these components.

Waller presents a dense topic in a clear manner in only 238 pages. Perhaps he should devote a longer book to the subject for people who could glean from his expertise. For now, this one-stop shop approach will suffice.

Julie Kinyoun

Julie Kinyoun teaches chemistry at local community colleges in southern California. As a freelance writer, she writes about biological, physical and chemical sciences for local and national publications. Julie holds an MA in chemistry from San Diego State University.

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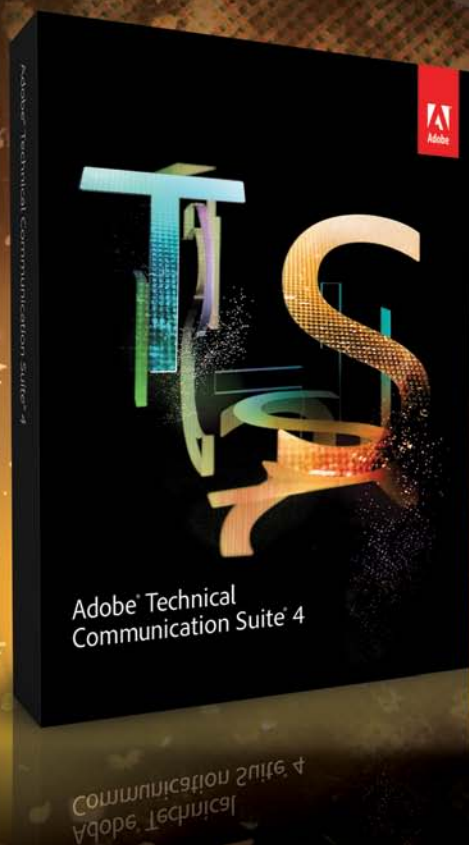
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